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ENCYCLOPEDIA OF

AMERICAN
EDUCATION

THIRD EDITION

Harlow G. Unger



VOLUME I

A-E

Encyclopedia of
**AMERICAN
EDUCATION**

Third Edition



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 **Facts On File**
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Encyclopedia of American Education, Third Edition

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*To my dear friends
Chuck and Cherie Everett
Ted Richards and Paula Gills
and
Gene and Lorraine Zaborowski*

He who does not increase knowledge, decreases it.

He who studies not is not worthy of life.

—Hillel

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PREFACE

The *Encyclopedia of American Education, Third Edition* is designed as an easy-to-use reference for the entire educational community: above all, students of education, but also teachers, librarians, parents, school administrators, school board members, legislators and all others directly or indirectly affiliated with or interested in education and the education process. With more than 2,500 entries, the encyclopedia was honored by the American Library Association as one of the best new reference works when the first edition appeared in 1996. The second edition, published five years later, improved and expanded the contents, and now this third edition has raised the standards still higher. The most comprehensive reference work of its kind, the new edition of the encyclopedia covers every broad area of education: administration, federal and state legislation, court decisions, finance, pedagogy, special education, vocational education, history, school reform, classroom technology, and so on. The list is all but endless. The encyclopedia also presents in-depth examinations of the many complex problems facing American educators: illegal immigrants, the spread of Islam, bilingual education, ethnic and racial educational achievement gaps, campus crime, charter schools, intelligent design, rewards and risks of Internet in classrooms and libraries, failing schools, failing students, digital libraries, illiteracy, high school and college graduation rates, national testing, school vouchers, financial aid and hundreds of other topics. The

appendixes add another dimension, providing an extensive cross-referenced bibliography for each subject area, a chronology of education in America since 1607, a listing and summary of significant federal legislation in education since 1787, and a listing with summaries of major U.S. Supreme Court decisions affecting education since the first decision in 1819 to the most recent.

Another new dimension in the third edition of the encyclopedia is the revelation of new research into academic rankings for each state public school system and the correlation among student academic proficiency, education funding, teacher salaries, pupil/teacher ratios, poverty and other factors affecting student achievement. Startling statistics disclose that failing schools and failing students may have less to do with funding and education in schools than the economy, culture and society of neighborhoods that surround schools.

Since the groundbreaking first edition appeared in American libraries, American education has changed dramatically, and the encyclopedia has kept pace, adding nearly 100 new articles on a variety of topics, including electronic classrooms, digital libraries, and breakthroughs in special education such as RTI and DIBELS. Wireless and virtual classrooms did not exist when the first edition went to press, and e-textbooks and interactive whiteboards seemed little more than high-tech curiosities when the second edition appeared. These and dozens of other electronic teaching tools

are elements of growing importance to mainstream American education today and, accordingly, to this third edition of the *Encyclopedia of American Education*.

In compiling the third edition, we have updated thousands of statistics and revised more than 750 articles, including entries on the history, trends and quality of education in each of the 50 states and the District of Columbia; the results of national tests under the National Assessment of Educational Progress program, and the development of national academic standards. Like the two previous editions, the third edition does not shy from controversial areas—the decline in affirmative action and resegregation of American public schools, the obsessive struggle of Christian fundamentalists to inject biblical “truths” and creationism into public school science curricula and, perhaps the most controversial, the failure of the U.S. Department of Education’s massive, multibillion-dollar spending schemes to improve student academic proficiency or to budge the persistently low high school and college graduation rates from their levels of more than a decade ago.

The information in this encyclopedia was culled from the references cited in the bibliography as well as a host of other sources. Some are standard reference works, of course, but others

include the range of great works on education from Plato’s *Republic* to Rousseau’s *Émile*. Not every source can be cited for every iota of data in this work. The list would be endless, stretching from antiquity to Horace Mann, Booker T. Washington, Emma Willard and, more recently, John Goodlad and TheodoreSizer.

In addition to the many famous names that do appear, I would also have to list dozens of officials in public and private organizations who have invariably responded willingly and generously to my endless queries. They work at the U.S. Department of Education and at various state education departments, at schools and colleges and universities and at many non-school educative organizations such as museums, private foundations, trade associations and charitable organizations. Many teachers, librarians and school administrators have also proved generous with their insights, knowledge and time. I also wish to thank the brilliant educators who serve on the board of editorial consultants. I owe special thanks to editor in chief James Chambers and the entire editorial and production staff at Facts On File for invaluable contributions in producing this complex work and making it so important a contribution to teacher education in the United States.

—Harlow G. Unger

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INTRODUCTION

The origins of education stretch back millions of years to the development of the first primitive vertebrates, which instinctively taught their young the techniques of survival: how to find food and how to defend themselves against predators. Over time, successful education has consistently proved critical to the survival of the individual and the entire species; unsuccessful education has inevitably led to extinction—of many human as well as subhuman species.

Education of primitive vertebrates as well as modern man begins at childbirth, as parents gradually impart knowledge, skills and values that permit their children to function safely and efficiently and make self-enhancing decisions. In early civilizations, children were educated informally, within the family unit, in preparation for the roles they would play in adult life—namely, man as hunter and fighter and woman as caretaker of infants and the home. As humans evolved into social beings and congregated in herds for mutual protection, education also evolved, and the number of skills children learned expanded. But education evolved in other ways as well—and not always for the betterment of the species. Enculturation, or institutionalization, of education broadened and hybridized it to add cultural indoctrination to the basic skills taught for the preservation and propagation of the species. God-centered religions in some societies indoctrinated followers in the belief that women were naturally weaker and inferior to men. Ancient Greece and

Rome reserved education for men, although the Greek philosopher and teacher Plato advocated equal educational rights for women in *The Republic*, his concept of the ideal state. In the Christian Bible, Saint Paul urged Christian wives to be obedient to their husbands. Hinduism promised virtuous women the reward of rebirth as men. Enculturation of education in some societies actually undermined the original goals of education—survival of the species. Like lemmings, humans in many societies learned to march in lockstep to their deaths in metaphorical seas—as French armies marched to their destruction on the Russian steppes in the early 1800s and as the German and Japanese pursued their own national destructions in World War II. Whether for good or evil, all modern education encompasses enculturation that teaches children the values of their society and the most prized forms of behavior in it. Churches have practiced such education for centuries, and state-operated schools have followed suit to a greater or lesser degree, in direct proportion to the extent of individual freedom in each society.

The roots of American education reach back to the earliest known Western civilizations, which taught the religion and traditions of the particular civilization as well as essential skills for perpetuating that civilization. The temple schools of ancient Egypt taught writing, mathematics, the sciences, and architecture, as well as religion and national traditions. The Greeks added another element to education:

the preparation of young men for self-government and leadership roles in their state and society.

Formal education in North America began about two decades after the arrival of the first European settlers in New England, New Netherland (now New York), and Virginia. Initially, parents and local churchmen shared the task of educating the young: Parents taught their children the gamut of skills they would need to survive on frontier farms, and churchmen taught the scriptures—to fend off the satanic barbarism the church feared life in the wilderness would inevitably produce. As the population expanded and the number of children increased, state-built schools began replacing churches as sites in which to educate the young. Boston was the first to establish a formal school, in 1635, and nearby Ipswich and Charlestown followed suit the following year. In 1638, Cambridge set aside three acres for “a public school or college” that would become HARVARD. Dorchester, Newbury and Salem opened schools the following year. Meanwhile, the Dutch West India Company established the first school in New Amsterdam, and five years later, in 1643, the Virginia Assembly voted to open the first school in that colony. Within a decade, schools were sprouting in villages across the colonies—with churchmen still leading most of them “lest degeneracy, barbarism, ignorance and irreligion do by degrees break in upon us,” explained Jonathan Mitchell, a leading New England minister who helped found Harvard.¹ Far from erudition, instruction in colonial schools ensured that children learned “to read and understand the principles of religion and the capital laws” of the colonies in which they lived. To that end, Massachusetts enacted its famed “Old Deluder Satan Act”—a landmark piece of legislation

that established education as a basic, universal human right in the New World. As parochial as the act now seems, it represented the world’s first universal compulsory education law, and it made the establishment and administration of formal schools an obligatory function of government. It also established the principle of local taxation to pay for local schools. Passed on November 11, 1647, the historic legislation ordered

every township in this jurisdiction, after the Lord hath increased them to the number of fifty householders, . . . [to] forthwith appoint one within their town to teach all such children as shall resort to him to write and read, whose wages shall be paid either by the parents or masters of such children, or by the inhabitants in general, by way of supply, as the major part of those that order the prudentials of the town shall appoint; provided, those that send their children be not oppressed by paying much more than they can have them taught for in other towns; and it is further ordered, that where any town shall increase to the number of one hundred families or householders, they shall set up a grammar school, the master thereof being able to instruct youth so far as they may be fitted for university, provided that if any town neglect the performance hereof above one year, that every such town shall pay five pounds to the next school till they shall perform this order.

The effect of the Old Deluder Satan Act was dramatic. Within 10 years of its passage, all eight of the 100-family towns in the colony had complied by establishing GRAMMAR SCHOOLS, and about one-third of the 50-family towns had established PETTY SCHOOLS. Connecticut enacted a similar law in 1650, and Plymouth—then a separate colony—followed suit in 1658. By 1689, schooling had become an established element of life in British North America. Virginia had six schools, Maryland at least one, New York at least 11, and Massachusetts at least 23.

1. Jonathan Mitchell, “A Modell for the Maintaining of Students & Fellows of Choise Abilities at the College in Cambridge,” *Publications of the Colonial Society of Massachusetts*, XXI (1935), 311.

Communities without formal petty or grammar schools depended largely on private tutoring, either by ministers at church, private tutors or literate mothers, who taught children for a fee in their homes—the so-called DAME SCHOOLS. Usually reserved for sons (and only an occasional daughter) of the wealthy, property-owning gentry, dame schools and more formal petty schools taught basic reading, writing and arithmetic (along with basic religious studies) to children five to seven years old. They were the forerunners of today's elementary schools. The higher-level grammar school extended the curriculum to include the study of Latin, Greek, literature, advanced religion and other studies needed “to prepare such youths for college and public service of the country in church, and commonwealth.”² The grammar school curriculum lasted seven years and was offered exclusively to sons of the propertied on a year-round basis, allowing students to take leaves of absence during planting and harvesting and resume their studies during those seasons when they were not needed in the fields. Ninety-five percent of the population were farmers, and even the wealthiest of them could ill afford to lose their sons at planting and harvesting time.

The 18th century saw little change in the basic patterns of education in the colonies. It did, however, reflect population growth with a startling expansion in the number of schools and colleges and a shift in the curriculum from the religious to the practical, with the introduction of courses on mechanics, agriculture, commerce and business to meet the needs of an expanding society and nation. As the industrial revolution gained momentum, American colonists demanded that schools teach their children courses needed to exploit the wilderness.

Education, however, was usually reserved for white males from families who could afford

to pay the required school fees. Although some girls were allowed to attend petty school, they were not permitted to attend grammar school or college, and what education they did receive was limited to the “domestic arts,” centering around skills needed for nurturing infants and maintaining the household. Even the expanded role of women necessitated by life in the colonial wilderness did little to expand women's access to formal education. English common law was clear: “Husband and wife are one, and man is the one.” Girls, like boys, were the property of their fathers, and women became the property of their husbands, having no control of their persons or their children, no right to own land or money and no access to an academic education. The domestic arts that they learned dealt with child rearing and household maintenance; the ornamental arts included singing, dancing and other skills to amuse husbands and “ornament” their households.

Black and American Indian children were also denied almost all education, despite efforts by a handful of school reformers such as ANTHONY BENEZET. What formal instruction they did receive was limited to simplistic biblical studies that reinforced the notion that people of color were inferior beings, descended from Ham and condemned by God to serve the white man in perpetuity. A few benevolent slaveholders—notably GEORGE WASHINGTON—taught some of their slaves basic skills such as carpentry and bricklaying.

Ironically, independence brought few changes to American education, despite demands from some humanistic signers of the Constitution for a national system of free, universal public education. George Washington, John Adams, THOMAS JEFFERSON, JAMES MADISON, BENJAMIN FRANKLIN and BENJAMIN RUSH all favored the establishment of a national school system that would ensure elementary school education for all children and allow all who passed competitive examinations to progress, respectively, to grammar school, col-

2. *American Journal of Education*, IV (1857), 710.

lege, and, for an elite few, to a national university that would prepare them for national leadership—a system similar to the one Plato outlined in his *Republic*. Successful completion of national university was to have been a prerequisite for service in all federal elective offices, including Congress and the White House.

The proposal was defeated by southerners, who feared that education of slaves would lead to manumission, and by northern industrialists, who profited from child labor and indentured female workers. As a result, the CONSTITUTION omitted all mention of education and, under the Tenth Amendment, left the question to the states. The latter, in turn, left education in the hands of local communities, and ultimately to parents. Few of the latter could afford not to take advantage of their children's earning power, and formal schooling declined in the early decades of the republic.

Some educational reformers were at work, however. In New England, CATHERINE BEECHER, EMMA WILLARD and MARY LYON were promoting the cause of women's education. In 1821, Emma Willard established the first female academy that offered an educational equivalent to that which men received. In 1823, Catherine Beecher opened a comparable academy in Hartford, and over the next 20 years she helped open the teaching profession to women. In 1837, Mary Lyon established the world's first college for women at Mount Holyoke, Massachusetts.

Meanwhile, HORACE MANN and HENRY BARNARD established the first statewide public school systems that guaranteed free, universal elementary school education in Massachusetts, Connecticut and Rhode Island, thus allowing the first black and poor white children to attend school and acquire basic literacy and numeracy skills. Although children continued to represent the cheapest and most profitable form of labor, some industrialists found that worker illiteracy was hurting the quality of their products and gradually costing them important shares of international markets.

Many responded by throwing their support to Mann and other educational reformers. In 1852, Massachusetts enacted the nation's first law making school attendance compulsory for at least 14 weeks a year for all children between the ages of eight and 14.

By the end of the Civil War, the public school movement had spread to almost all states outside the South, and northern military authorities forced the South to accept the concept as well. The decade following the Civil War saw the public school movement spread to higher education with the passage of the Land Grant (Morrill) Act of 1862, which granted each state federal lands on which to establish agricultural and mechanical arts colleges to give young Americans the skills needed to exploit and live along the nation's expanding frontiers. American farmers had exhausted much of the soil in the Northeast and Middle Atlantic states because, as hard as they worked, they had little or no knowledge of proper fertilization and crop rotation. In New England, Yale College president TIMOTHY DWIGHT wrote that "our fields are covered with a rank growth of weeds" because of "insufficient manuring, the want of good rotation of crops, and slovenliness in cleaning the ground."³ In Virginia, once the world's major supplier of tobacco, entire counties lay barren, unable to grow even wheat, much less tobacco.

Ironically, the decline in American farm productivity came just as demand for produce and livestock was soaring because of an explosive growth of American and European cities. Farmers themselves were as alarmed as political and educational leaders by their scientific and technological backwardness and their inability to profit from growing demand for agricultural products. The founding of land grant colleges—the heart of today's state university sys-

3. Timothy Dwight, *Travels in New England and New York* (1821–22), edited by Barbara Miller Solomon (Cambridge, Mass.: Harvard University Press, 1969, 3 vols.), I:76.

tems—offered farmers’ boys complete courses of education in agricultural and mechanical arts, as well as training for each state’s militia (today’s National Guard), and, in the end, the colleges proved to be the key to reviving and maintaining American agriculture. It was not lost on educators that the success of the land grant colleges was largely based on reversion to education’s original, prehistoric goals of teaching the young the basic techniques of survival: finding and producing food and protecting themselves against attack by predators.

By 1900, 32 states had passed compulsory education laws, but few states intended those laws to provide children with much more than basic literacy and numeracy, and almost none intended to provide those skills to women, blacks or American Indians. Indeed, only 10% of American children were attending high school in 1910. The rest were working in mines, fields and factories. It would not be until the mid-1930s that the federal government would pass a child labor law to prevent the exploitation of children and allow them to continue their education beyond elementary school. As late as 1940, only 30% of American children went to high school; few schools in the North and none in the South admitted blacks or American Indians. “Black codes” in most southern states made teaching literacy to blacks a felony punishable by heavy fines and imprisonment.

Nonetheless, the seeds of social change had been planted. The compulsory education laws that were on the books in the early 1900s produced a vast expansion in the number of elementary schools—and new opportunities for teachers. Men, however, scorned the low salaries and inadvertently opened a huge new profession to women. By the beginning of World War I, women had taken control of the teaching profession in elementary schools, and outstanding women’s colleges had been founded throughout the United States to train teachers. Even all-male colleges such as Harvard and Columbia established affiliated col-

leges for women, who suddenly used their education, their new-found independence and the strength they accumulated in their numbers to demand, and win, the right to vote shortly after World War I.

It was not until the end of World War II, however, that the concept of truly universal education envisioned by many of the Founding Fathers would become a reality. The first major step in that direction came with passage of the G.I. BILL OF RIGHTS of 1944, which guaranteed every veteran the right to complete high school and obtain a free college education—in effect, a reward from a grateful American public to the returning soldiers, sailors, marines and airmen who had saved the nation and the free world from the scourge of totalitarianism. As white veterans of all economic and ethnic stations marched through the gates of academe, however, blacks, Indians and women—even veterans—continued to find most of those gates barred to them, and the few institutions that did open their gates offered education inherently unequal to that afforded white men. Few women’s colleges offered courses in engineering, advanced sciences, advanced economics and other studies that prepared men for careers at the highest levels of the professions, industry and government. Blacks had even less access to quality education. In 1896, the U.S. Supreme Court had victimized American blacks by ruling in *PLESSY V. FERGUSON* that states had the constitutional right to segregate the races in “separate but equal” school systems. For the next 60 years, the SEPARATE-BUT-EQUAL DOCTRINE kept blacks segregated from whites in almost all areas of American life and condemned generations of African-American children to substandard education in the North as well as the South. While the latter subjected black children to *DE JURE* SEGREGATION, the North subjected them to *DE FACTO* SEGREGATION in equally inferior schools. In the 1946–47 school year, 17 states and the District of Columbia had laws that segregated black and whites in separate schools. Only 12 states had laws banning such segregation. In

1954, however, the National Association for the Advancement of Colored People (NAACP) won a dramatic victory when the U.S. Supreme Court reversed *Plessy v. Ferguson*. In the landmark case of *BROWN V. BOARD OF EDUCATION OF TOPEKA, KANSAS*, the Court ruled that separate schools, simply by their separateness, cannot be equal, and that segregation was unconstitutional. Unfortunately, nearly three generations of African Americans had grown up by then, in segregated, academically inferior schools set amid the poverty and crime of America's black slums, and it took the next half-century for desegregated public schools to begin closing the gap between the academic performances of black and white children.

The impact of *Brown v. Board of Education* was felt far beyond America's black slums. In fact, it was the progenitor of the CIVIL RIGHTS ACT OF 1964, which banned racial and ethnic segregation in American public schools, colleges and universities and all other educational institutions receiving federal assistance. With African Americans, Native Americans and Hispanic Americans free to attend the schools and colleges of their choice, it was not long before every other educationally deprived group of Americans demanded and won equal rights in education. Congress passed the EDUCATIONAL AMENDMENTS OF 1972, prohibiting discrimination on the basis of gender in educational institutions receiving federal aid. Universities across the nation were forced not only to open their doors to women but also to grant women access to the same courses of study as men. By 1994, more than half of all college students were women, and their numbers had grown dramatically in medical, law, business and other traditionally male graduate and professional schools.

In 1975, the last group of academically deprived Americans—some 8 million children with physical, emotional or intellectual handicaps—won virtually unrestricted access to the same education as other Americans. With approval of the EDUCATION FOR ALL HANDI-

CAPPED CHILDREN ACT OF 1975, Congress gave all handicapped individuals, aged 3 to 21, the right to the best possible education, free of charge, in the least restricted environment. The law provided funding for all necessary construction to make schools "barrier free" and accessible to handicapped children. When the law was passed, only about 1.6 million of the 8 million handicapped children in the United States were attending public schools. Most of the rest were either incarcerated in residential facilities or languishing idly at home. In both cases, they rarely received adequate academic or compensatory education to ensure their eventual independence.

With the advent of truly universal education came radical changes in the shape of American school systems, in the types of education offered, and in basic teaching techniques. In the 17th and 18th centuries, American schools had prepared only privileged white males for a small group of exclusive colleges and eventual lives in the ministry or public service. Secondary school and college curricula were limited to theology, Latin, Greek, mathematics, philosophy, French and English. The nation's westward expansion in the 19th century required a comparable expansion of school and college curricula to include more practical courses in business and commercial subjects, such as bookkeeping for those headed into commerce and agriculture, and mining and engineering for those intending to exploit resources along the nation's frontiers. The explosive growth of industrial production in the late 1800s forced American schools to expand their offerings into industrial and vocational training for future factory workers. Initially designed to teach a handful of traditional skills such as carpentry or printing, VOCATIONAL EDUCATION quickly expanded into an endless number of occupational skills, from aviation mechanics to cosmetology, to meet the needs of an ever-growing student population and an ever-expanding economy. By the end of the 20th century, American schools were fulfill-

ing every educational need of every American, with school curricula “limited only by the legitimate needs of adolescents,” according to the U.S. Department of Education. Critics of American public schools began arguing that the huge expansion of school curricula had undermined the quality of education and left too many students functioning below grade level. In the 1990s and early 2000s, Congress responded with a series of legislative forays into uncharted constitutional territory—the GOALS 2000: Educate America Act, the NO CHILD LEFT BEHIND ACT, and others—to develop national academic standards and eliminate state-to-state differences in academic achievement. All are under challenge as violations of the Tenth Amendment, which reserves regulation of education to the states.

The enormous expansion of the student population and curricula has forced radical changes in schooling patterns and teaching methods. Once organized into a relatively compact three-stage pattern over 10 years, schools today are organized in a two-decades-long, five-stage pattern—preschool, primary school, presecondary or “middle” school, secondary school and higher education—and each stage progressively less CHILD-CENTERED, or pedocentric. PEDAGOGY—the science of teaching—is said to be either scholiocentric or pedocentric. In scholiocentric pedagogy, the institution and instructor are central to the educational process, and the student is relatively passive and secondary. In pedocentric pedagogy, the student or child is central to and active in the educational process, while the institution and instructors serve as conduits. Historically, American pedagogy has evolved from extreme scholiocentricity to a range of pedagogic activities. The most extreme scholiocentric pedagogy dates back to early universities in Renaissance England, where the learned sermon was the sole method of instruction. Its modern counterpart, the lecture, remains the core of much college and university pedagogy. There is no active instruc-

tion, the lecture goes on whether students are present or not, knowledge is presented orally or in print, and students must gather the materials and teach themselves.

Preschool education today is almost entirely pedocentric, revolving as it does around socialization—that is, teaching two- to four-year-olds self-control, sharing, getting along with others and other social and intellectual skills needed for living and working in school and society. PRIMARY SCHOOL teaches five- to ten-year-olds basic academic skills—reading, writing, calculating and so forth—and basic concepts of history, geography, the natural and social sciences, music, art, crafts, sports and health and hygiene. It remains relatively pedocentric, as teachers inform, explain and demonstrate before asking questions and allowing students to imitate. (It is, in effect, similar to the pedocentric approach in old-style apprenticeships, in which the master demonstrated an aspect of his craft and the apprentice was expected to imitate.)

Secondary school generally has two levels: MIDDLE SCHOOL and HIGH SCHOOL. Although education at both levels progresses through continually advancing levels of traditional academics, middle school instruction is geared to coping with specific problems of pubescent children, 11 to 14 years old. High school instruction veers sharply from child-centered methods to subject-centered presentations, in which students are expected to have the maturity to sit quietly in class, taking notes, as teachers lecture at ever-increasing lengths. Higher education—college and graduate school—provides advanced, specialized studies leading to bachelor’s, master’s and doctorate degrees in specific academic or professional areas. Its pedagogical approach, as stated above, is largely scholiocentric—that is, subject-centered, with the institution and its instructors central to the educational process and relatively passive students acting as mere vessels into which knowledge is funneled. The admission of handicapped students to college, however, has forced some institutions to adopt

some pedocentric pedagogy for that student constituency.

As educational institutions have universalized their reach, schools at all levels have been forced to assume many noneducative roles, which, critics argue, are reducing their effectiveness as educational institutions. Among these new, noneducative roles are college advisory and job-placement services, career counseling, psychological counseling, sex education, drug and substance abuse education, antiviolen-
ce education, family intervention and social work, pregnancy counseling, supervision and educations of the handicapped and learning disabled, driver education, and on and on. Soaring divorce rates have forced many pre-schools, elementary schools and even middle schools to establish day-care facilities after normal school hours, and some school boards are pressuring schools to provide morality education and even moments of prayer during school hours—clearly an unconstitutional activity in tax-funded institutions.

“Today’s high school is called upon to provide the services and transmit the values we used to expect from the community and the home and the church,” declared the legendary American educator ERNEST L. BOYER. “And if they fail anywhere along the line, they are condemned. “What,” he asks, “do Americans want high schools to accomplish? Quite simply, we want it all.”⁴

Decades earlier, another great American educator, ARTHUR BESTOR, warned, “The idea that the school must undertake every need that some other agency is failing to meet, regardless of the suitability of the schoolroom to the task, is a preposterous delusion that in the end can wreck the system.”⁵

4. Ernest L. Boyer, *High School: A Report on Secondary Education in America* (New York: Harper Colophon Books, 1983), 57.

5. Arthur Eugene Bestor, *Educational Wastelands: The Retreat from Learning in Our Public Schools* (Urbana: University of Illinois Press, 1953), 75.

Encyclopedia of
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Third Edition



A

Aaron v. McKinley A 1959 federal court decision that declared Arkansas school-closing laws unconstitutional and ended a two-year crisis over desegregation of Little Rock schools. In 1957, Arkansas governor Orval E. Faubus blocked the enrollment of nine black students into previously all-white Central High School in Little Rock. Under federal district court order to desegregate its schools, the school had accepted the nine for admission under a long-term plan it had adopted for gradual desegregation. Faubus “interposed” his own authority between the federal government and the local school board by ordering the Arkansas National Guard to keep public order and bar the black students from school. After the federal court ordered Faubus to cease interfering with the promulgation of its order, he withdrew the Guard, and the students entered the school, but white mobs congregated around the school and threatened their safety.

President Dwight D. Eisenhower responded by federalizing the Arkansas National Guard and ordering it to disperse the mobs and enforce desegregation. Governor Faubus again intervened by ramrodding a school-closing law through the state legislature and closing Little Rock High Schools for the 1958–59 school year. In *Aaron v. McKinley*, the federal court reasserted the post–Civil War legal relationship between the states and the federal government by striking down the Faubus “doctrine of inter-

position.” It ruled the school closing law unconstitutional, and Little Rock schools reopened and remained integrated thereafter. Aaron was one of the nine students seeking admission to Central High School, and McKinley the Arkansas official who had closed it.

abacus An ancient device using large beads as units to calculate and to teach calculating. Believed to have originated in ancient Babylon, abaci have been used in virtually every civilization since. They are still used in commerce in the Middle and Far East. Because they require no literacy, abaci are useful for teaching young children to count, to recognize place numbers and to add and subtract. The beads are usually mounted on parallel wires set in a frame, although they can also lie free in parallel grooves. Regardless of the configuration, each bead represents a 1 on the far-right row, a 10 in the next row to the left, 100 in the next row, 1,000 in the next, etc.

Abbott, Jacob (1803–1879) Pioneering 19th-century educator-clergyman and author of children’s books. Born in Maine, Abbott studied physics at Bowdoin College, where he graduated in 1820. He taught at Portland Academy for a year (Henry Wadsworth Longfellow was one of his students) and then at an academy in Beverly, Massachusetts. After studying theology at the then-famed Andover

Seminary for five years, he became professor of mathematics and natural philosophy (physics) at AMHERST COLLEGE, where he led the faculty in an attempt to reform the classical curriculum by adding more practical courses to meet the needs of students bound for business, commerce and agriculture in an expanding nation.

Three years later he married and moved to Boston, where he founded the Mount Vernon School, a pioneer American school for young women. By then a legendary teacher, he discarded the usual, harsh methods for teaching and disciplining students and put students on their honor. In what may have been the first example of student self-government in the United States, Abbott trusted them to govern themselves.

After five successful years at Mount Vernon, he left to pursue his growing interests in preaching and writing. He gave up preaching after only two years and devoted the rest of his life to writing and traveling. Over the next four decades, he wrote 180 books, co-authored 31 others and wrote dozens of articles on education for various periodicals.

The Young Christian (1832) was his first important book. Designed as a children's guide to religion and moral behavior, it was one of the most popular books of its day and established Abbott as the foremost writer of children's books in the United States. In 1834, he followed up his success by launching a 28-volume series about a boy named Rollo—*Rollo at Work*, *Rollo at Play*, *Rollo's Travels*, etc. The series proved as popular with children in Britain, Europe and even the Far East as it did with American children. Teachers and parents were equally enthusiastic about the series. Filled with humor and adventure, the Rollo books were simply told tales about the worldwide travels of Rollo and his omniscient Uncle George. The books used anecdotes to teach children about good behavior, ethics, religion,

science, history, geography, travel and a wide variety of other topics.

Along with Abbott's Red Histories and Science for the Young series, the Rollo series entertained and informed a generation of young Americans. In the absence of universal free schooling and adequate textbooks, the Rollo series provided young people with a basic source of education both in school and out.

Abbott wrote manuals of advice such as *Gentle Measures in the Management and Training of the Young* (1871) and books for teachers such as *The Rollo Code of Morals*, with questions to ask students after reading each Rollo book. Abbott also wrote 22 volumes of biographical histories and the 10-volume *Franconia Stories*.

Abecedarian An obsolete term for a child learning the rudiments of the alphabet; derived from the Middle English *abecedary* and the Latin *abecedarium*, meaning "alphabet."

Abecedarian Project A 28-year longitudinal study of 111 African-American families in Chapel Hill, North Carolina, to determine the effects of quality day care on medically healthy infants and preschool children who, because of their sociocultural and economic circumstances, were deemed to be demographically "at risk" of eventual failure at school and beyond. The study found that, although all the children had tested below average for the nation, children who received high-quality day care not only scored higher on both cognitive and academic tests than children who did not get day care, they also were more likely to attend college or hold high-skill jobs as adults.

After pairing the children for cultural, intellectual and socioeconomic characteristics, the researchers placed half the children in high-quality, full-time day care from infancy to age five, while the others—their socioeconomic "twins"—received nutritional supplements to

ensure good health maintenance and the regular social work care provided for families in their economic circumstances. At five, the children enrolled in comparable public schools, attending the same kindergartens, and the entire group was studied for more than two decades, through elementary school, high school and early adulthood. By 15, only 30% of the day care children had been forced to repeat a grade, compared to 56% in the other group, and twice as many of the latter were in special education classes. Thirty-five percent of those who had been in day care enrolled in four-year colleges before their 21st birthdays, compared with 14% in the comparison group. At age 21, 65% of the day care children were either in college or had good jobs, while only 40% of the non-day care children were in similar circumstances. Fewer of the day care participants had children of their own by age 21, and those who were parents did not have children until they were 19, while parents in the other group began having children at 17. There were no significant differences in rate of criminal or immoral behavior.

The project was the first ever to study a large group of children from infancy, at four to six weeks old, to adulthood, and its results seemed to confirm the value of the U.S. government's huge, multibillion-dollar HEAD START program that provides day care and preschool education to about 750,000 economically deprived children across the nation every year.

ability grouping A controversial method of grouping children in classes, courses of study or schools according to any of a variety of abilities, as measured by tests, subjective observations or both. Students may be grouped by any of the following: I.Q., academic performance or academic potential; special talents or gifts in any of a wide variety of arts, crafts or vocational skills; athletic or physical ability; or degree of mental, emotional or physical disability or

handicap. Some groups of children may thus begin the school year at the appropriate grade level for their age, others one-half year ahead or behind in between-class groupings.

The broad argument in favor of ability grouping is that it allows student groups to progress at a pace appropriate to their level of skills. Faster students are not held back and slower students are not confused or humiliated by the pace of more advanced students. The broad argument against ability grouping is that it is a self-fulfilling prophecy. A wide range of studies have demonstrated that teachers of low-ability classes have lower expectations for their students and, therefore, demand less and teach them less. Similarly, teachers in high-ability classes have higher expectations, work their students harder and cover more material during the academic year.

Students, in turn, are almost always aware of the significance of ability grouping and respond according to teacher and school expectations for their group.

(See also ADVANCED PLACEMENT PROGRAM; HOMOGENEOUS AND HETEROGENEOUS GROUPINGS; TRACKING.)

absenteeism A term referring to the physical absence from class or school by students. The Department of Education estimates student absenteeism to be a serious problem in 12% of American public schools, with student tardiness a serious problem in 14% of schools and cutting classes a problem in 12% of schools. Absenteeism is especially troublesome in high schools, where nearly 35% of 10th graders and about 26% of 12th graders are absent 10 or more days during the school year and therefore are considered chronic truants. Absenteeism varies dramatically with socioeconomic status, ranging from rates as low as about 20% in high schools in the highest socioeconomic communities to higher than 40% in schools in low-income areas.

Although illness is one major cause of student absenteeism, truancy is another, as is parent-ordered absences for a variety of family-oriented reasons ranging from weddings or deaths to family outings and vacations. No statistics are available on the proportions of each cause, although some major cities such as New York estimate that chronic truants account for half the absentee rates in public school, with the number of chronic truants in high schools only slightly higher than the number in elementary schools. Most school principals cite parental indifference as a primary cause of absenteeism, and many school districts are stepping up efforts to combat truancy by prosecuting parents of chronically truant children and threatening them with fines and imprisonment. Absenteeism is not measured at colleges and universities, where class attendance is seldom a requirement for passing a course.

(See also ATTENDANCE; TRUANCY.)

abstract Usually a one-paragraph summary of an article, pamphlet or book. Abstracts permit researchers to scan a large body of literature to determine which particular items may be of specific help or relevance to their particular projects.

There are many journals devoted exclusively to publishing abstracts. For educational researchers, the most widely used are: *Children's Literature Abstracts*; *Child Development Abstracts and Bibliography*; *College Student Personnel Abstract*; *Completed Research in Health, Physical Education and Recreation*; *dsh* (deafness, speech, hearing) *Abstracts*; *Dissertation Abstracts*; *Education Administration Abstracts*; *ERIC—Resources in Education* (the most complete of the educational abstract journals, published by the Department of Education's Office of Educational Research and Improvement); *Exceptional Child Education Abstracts*; *Language and Language Behavior Abstracts*; *Rehabilitation Literature*; *Sociology of Education Abstracts*.

(See also EDUCATIONAL RESOURCES INFORMATION CENTER [ERIC].)

academic dress The caps, gowns and hoods worn by students, graduates and officials of schools, colleges and universities. Academic caps and gowns, or "academics," as academic dress is more properly called, date from the Middle Ages, and the first European and English colleges and universities. Most of these were schools for theologians, and students and teachers alike simply adopted the standard clerical dress—the "cappa," or plain, ankle-length cassock, and, when appropriate, a biretta, a stiff, square cap with a tuft on top, which eventually evolved into the modern tassel.

The cappa was the simplest of the toga-like clerical gowns and, therefore, the least costly and most appropriate for "clerks," or clerical students. Initially, gown colors indicated ecclesiastical rank or a particular order. As in today's Roman Catholic Church, scholars and lesser clergy wore black; bishops and monsignors, purple; cardinals, red; and the pope wore white. The colors themselves were symbolic of various elements of the passion of Christ—red being a symbol of Christ's blood, and so on. Only higher level clergymen wore birettas, whose colors also indicated a clergyman's rank. Under agreements between church and crown, the distinctive clerical dress rendered all wearers personally inviolable and immune from secular courts.

In the mid-14th century, some individual colleges and universities began to adopt cappas with distinctive shapes and colors. Doctors in the superior faculties also adopted distinctive colors. The materials from which cappas were made varied according to temperature and season. Because scholars were forbidden to wear birettas, they used fur "hoods" to cover their heads in winters and wore tippets, or long black scarves, over their robes to keep warm.

With the gradual secularization of universities in the 16th and 17th centuries, baccalaureate and then undergraduate scholars began wearing birettas, and hoods gradually disappeared. Today's academic hood is actually a variation of the tippet. Its color varies according to the wearer's degree and college or university. No longer restricted to college and university students, academics are worn by graduating students at all levels of education, including even elementary school students in some communities. The biretta's shape was changed to that of a "mortar board" in the 19th century to reduce the complexity and cost of manufacturing by standardizing the shape and size of the upper part of the headpiece.

academic freedom The freedom of college and university students, researchers and teachers to obtain and impart knowledge without interference by university administrators, government officials, nonacademics in or out of the institution or by other academics within or without the institution.

Although the concept of freedom of inquiry was first introduced in the American "academies" (see ACADEMY) of the early 18th century, academic freedom as used today is a relatively new concept. It was first defined in the United States by the AMERICAN ASSOCIATION OF UNIVERSITY PROFESSORS in a 1940 *Statement of Principles on Academic Freedom and Tenure*. This said that academic freedom included three basic rights: the right to teach students any matter related to their courses, regardless of how controversial; the right to conduct research and to publish the results of that research; and the right to exercise one's constitutional rights of free speech (oral and written) and freedom of association on and off campus.

In more normal times, the AAUP statement might have provoked more controversy than it did, for in 1940, American colleges and universities were hardly bastions of free speech or

protectors of constitutional rights. Indeed, few institutions of higher learning in the world, let alone the United States, had ever condoned free inquiry into or unrestricted teaching of ideas contrary to the interests of state or church, and almost all American college and university administrations kept strict controls over who could join their faculties or student bodies.

In 1940, the vast majority of American colleges barred entry to all but a handful of African Americans and maintained strict quotas on the numbers of Catholics and Jews they admitted. But American academe was also eager to disassociate itself from universities in Nazi Germany and other totalitarian countries, where once-great institutions were meekly acceding to government orders to crush political dissent and free thought. The flight of German professors and researchers from Nazi academic restrictions provoked JOHN DEWEY, then professor of philosophy at Columbia University, to help found the University-in-Exile in New York for them to continue their work. Support for the University-in-Exile and the statement on academic freedom by the AAUP, which Dewey also helped found, offered American higher education a way to feign support for academic freedom. It remained nothing more than a pretense for many years, however, and academic freedom remains a source of great controversy on virtually every American college and university campus.

During World War II, there was no question of academic freedom in the sense of freedom to present and publish ideas contrary to the interests of the American government. For security reasons, the federal government banned all disclosure of wartime research it sponsored on university campuses. By the end of the war, government control and sponsorship of on-campus research had grown so pervasive and so financially rewarding to university communities that few administrators were willing to test Washington's right to control what

campus researchers did, said or wrote. The cold war seemed to make continuation of such controls necessary for security reasons if nothing else.

Ironically, it was government, even as it insisted on secrecy, that was instrumental in opening university halls to a degree of academic freedom never before tolerated. As national security and the public interest demanded the most advanced level of scientific research, government and universities alike had to recruit many of the world's foremost intellects. Many were fiercely independent scientists who brooked no interference in their work by non-academic government or university bureaucrats. In agreeing to develop a new weapon in the interests of national security or a new vaccine in the interests of public health, they demanded and won the right of free inquiry and free exchange of ideas with colleagues.

As the cold war heated up in the late 1940s and early 1950s, however, fears began to take hold that communism might spread to the United States through "mind control." Government investigators stripped suspected "left-leaning" researchers and academicians of security clearance to work on government projects. Fearful of losing government grants, some college administrators summarily dismissed faculty members with links to communism or communist thought. The "wrong" books, the "wrong" statements in lectures or discussions and the "wrong" associations were enough to provoke the banning of books and the dismissal of researchers and teachers at some institutions. The AAUP statement was all but forgotten.

The 1954 Supreme Court decision banning racial SEGREGATION in public schools exposed university racial and religious intolerance to the entire world, however. Even the most exclusive private colleges were humiliated into opening their student bodies and faculties to members of racial and religious

minorities. The result was an immediate expansion of academic freedom, sometimes voluntarily, sometimes involuntarily. At some colleges, minority groups used the threat of legally sustainable discrimination complaints in court to force university administrations to revise and expand course offerings. At others, students and faculty rioted and seized administration buildings to win concessions in the name of academic freedom.

Whatever the means, they did win, and few colleges and universities did not expand studies of literature, history, sociology, economics, religion and other subjects to include a more accurate portrayal of the American past and present as they applied to other than the white Anglo-Saxon Protestant population that had founded and controlled the United States for nearly two centuries.

In effect, faculties and students seized control of American colleges and universities from their administrators, whose roles in many institutions were reduced to operational functions. Faculties took control of hiring and firing colleagues and determined who would teach, what they would teach and how they would divide their time between teaching and research. College students, meanwhile, had won legal independence from their parents when, in 1971, a constitutional amendment lowered the voting age and, in effect, the age of majority, from 21 to 18. Students now took full control over their choice of studies, and most schools acceded to student demands for abandonment of almost all course requirements. The Vietnam War expanded academic freedom even more, when protestors forced universities to reduce or eliminate their ties to the Defense Department. Their success, in many cases, opened an era of vast research into government policy and operations. The women's rights movement forced still further easing of university resistance to academic freedom by opening formerly all-male institutions to women students and faculty.

As academic freedom swept across many university campuses, however, many of those faculty members and students who had helped win that freedom seemed no more able to cope with it than the administrators who had fought it. In some institutions, faculty and students seemed unable or unwilling to draw a line between academic freedom and academic anarchy. Faculties in such relatively new areas as African-American studies or gay and lesbian studies, for example, distorted, exaggerated, rewrote, or even invented historical facts, justifying such distortions as necessary for student self-esteem. White supremacists, on the other hand, conducted specious research to prove a wide variety of racist theories—that blacks are genetically inferior, for example. At other institutions, faculty and students joined to ban or quash dissent, even shouting down the president of the United States when his views differed from theirs. Faculties at such private universities as Yale and Harvard banned the Army and Navy Reserve Officers Training Corps, thus depriving students of government scholarships, of the right to study military science and, indeed, of the right to serve their nation as undergraduates on campus. The State University of New York banned armed forces recruiters from its campuses. In the meantime, required study of traditional core curricula all but vanished from even the most prestigious, academically demanding colleges and universities, where few students graduate with even a rudimentary knowledge of history or the basic concepts (federalism, separation of powers, etc.) that shaped American institutions and government.

The courts have been of little help in resolving the conflict between academic freedom and academic license. Different courts, including the Supreme Court, have issued a wide range of confusing and often conflicting rulings on the frequent clashes between the right of free expression and the right to live free from fear of

humiliation and physical threat. In 1994, for example, a federal appeals court deemed it an unconstitutional abridgement of free speech for City University of New York to strip a black professor of his department chairmanship in African Studies for proclaiming in off-campus speeches that “rich Jews” had financed the slave trade. A year later, however, the same court reversed itself, saying that the professor’s statements were incendiary and threatened to disrupt college operations. On a different level, the courts upheld Brown University’s right to punish a student for shouting obscene anti-black remarks in a campus courtyard.

In general, the courts have supported certain limits to academic freedom as long as those limits do not impinge on a citizen’s constitutional rights. On the other hand, the Supreme Court ruled in *Waters v. Churchill* in 1994 that public employers have the right to dismiss employees whose speech, while constitutionally guaranteed, might disrupt normal operations in the workplace.

At the secondary school level, where almost all students are minors, the courts have consistently ruled that public school authorities, acting on behalf of parents, have the right to impose rules of conduct and academic requirements and to limit student access to a wide variety of materials, including Internet Web sites, which might include salacious or other materials deemed inappropriate for minors. Public school authorities may not, however, introduce any religious activity or otherwise violate the Establishment Clause of the First Amendment of the Constitution mandating complete separation of church and state.

academic proficiency See NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS.

academic quality A vague but widely used term usually referring to the breadth and depth of a school’s academic curriculum and

its success in teaching it to its students, as measured by objectively prepared and administered examinations. In short, academic quality refers to what is taught and how well.

Academic quality varies widely from school to school, town to town and state to state. The CARNEGIE FOUNDATION FOR THE ADVANCEMENT OF TEACHING estimates that 10% to 15% of American high school students are enrolled in schools providing the world's highest academic quality. About 20% to 30% of American high school students, on the other hand, attend schools that fail academically. The rest attend schools "where pockets of excellence can be found but where there is little intellectual challenge."

Socioeconomic and sociocultural conditions of the student population often determine academic quality. In general, the academic quality of schools with upper-income students is superior to that of schools with low-income students. The COLLEGE BOARD found that SAT scores of students from the poorest families, with annual incomes under \$10,000, scored more than 250 points lower than students from families with annual incomes above \$100,000.

At the low end of the academic spectrum are inner-city schools, whose students tend to be products of population dislocation, poverty, unemployed parents, broken homes, violence and crime- and drug-ridden neighborhoods. Many of these students are immigrant children who begin school semiliterate and unable to speak English. Most are two years or more below grade level and may be bored, restless and rebellious. Daily attendance at inner-city schools seldom reaches 60%. Students pay little attention in class and little learning takes place. Teachers have low expectations for their students and assign no homework. Half the students drop out before completing high school, and the majority of graduates are barely skilled enough to get part-time jobs. Few ever go to college. Also among schools of low academic quality are isolated rural schools in com-

munities where local religious and political beliefs intrude on or supersede the standard curriculum by banning books deemed too salacious, too liberal politically or at odds with local religious beliefs.

At the other extreme are a number of exclusive private schools and public schools in wealthy communities, where school facilities rival those of many colleges, and students go about their daily work purposefully and pay careful attention in class. At least 85% and often 100% of the students go on to four-year colleges. They take five or six subjects each semester and do two to three hours of homework each night. Academically high-quality high schools usually require students to study four years each of English, mathematics and history, three years each of science and foreign languages and two years each of music and art. Most students in such high schools have also studied each of those subjects intensively during two years of middle school.

The results of sociocultural differences are evident even before children enter high school. According to the U.S. Department of Education, only 43% of black eighth graders and 49% of Hispanic eighth graders achieved the two highest levels of reading proficiency in 1999, compared to 87% of white eighth graders. Only 4.4% of black eighth graders and 8.3% of Hispanic eighth graders achieved the two highest levels of mathematics proficiency, compared with 30.2% of white eighth graders. More than 37% of private school eighth graders achieved the two highest levels of mathematics proficiency, compared with 22.4% of public school children in the same grade.

The U.S. Department of Education and leading American educators tend to agree that a minimum acceptable curriculum for each year of school, from kindergarten through high school, should consist of a core of seven subject areas: English, mathematics, science, social stud-

ies, foreign languages, fine arts and physical education/health. How early and the extent to which each subject is taught serve as measures of academic quality. POOR-quality KINDERGARTENS, for example, operate only half-day sessions and concentrate on teaching children social skills rather than academic skills. Academically high-quality kindergartens, on the other hand, are full-day schools that expect children to have learned social skills in preschool and to concentrate instead on learning the basic CORE CURRICULUM: reading, writing, counting and computing, reasoning and problem solving, recognition of geometric shapes, an understanding of geographic and social concepts and an understanding of basic scientific concepts.

As important as the curriculum in determining academic quality are the educational results, as measured by objective testing. Unfortunately, many such tests produce misleadingly high results, either because of their simplicity or their predictability. Forty-nine states, for example, require students to pass competency tests to obtain high school diplomas, but some are so childishly simple that they produce misleadingly high scores. One asks high school seniors, for example, to put a check mark by the appropriate agency to call for a flu shot: the fire department, police department, doctor, ambulance, F.B.I. or Coast Guard.

Both President George H. W. Bush and President Bill Clinton called for the establishment of national academic standards, but Congress rejected the concept. With each state still setting its own standards, student achievement continues to vary widely, as seen in results of the U.S. DEPARTMENT OF EDUCATION'S NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS (NAEP). Although Idaho, for example, claims that 90% of its fourth graders (nine-year-olds) are proficient in mathematics, NAEP tests found only 41% proficient under its definition of proficiency. New York claims that 85% of its nine-year-olds met its standards of proficiency in

mathematics, and North Carolina reports 92% of its students proficient in mathematics. But only 36% of New York fourth graders and 40% of North Carolina fourth graders exhibited proficiency on the federal test.

The same variations emerged in reading proficiency. Fourth graders in Georgia, Alabama, Texas, Tennessee and North Carolina recorded astonishingly high levels of proficiency on state tests—87%, 83%, 83%, 88% and 88%, respectively. But only between 22% and 27% of those same students demonstrated acceptable reading proficiency on the federal NAEP test.

Even some of the more complex state achievement tests often fail as accurate measurements of academic quality because of the similarity of questions from year to year. Teachers can thus use questions from previous years to prepare students to get high scores without providing the underlying knowledge associated with academic quality. Such "TEACHING THE TEST" often produces high test scores, but neglects to teach the fundamentals of reading, writing, problem solving and an understanding of complex concepts. Teaching the test also makes students "test-wise" by teaching them to take "educated guesses," but leaves them with relatively little knowledge.

Among the most valid tests for measuring accumulated knowledge are those used for admission into academically demanding schools and college—for example, the Secondary School Admission Test and tests sponsored by the College Board and the American College Testing Program. The College Board's tests are the PRELIMINARY SCHOLASTIC ASSESSMENT TEST, the SCHOLASTIC ASSESSMENT TESTS and the ADVANCED PLACEMENT tests. The American College Testing Program tests accumulated academic knowledge in four broad areas: English, mathematics, social studies and science.

Academic quality is nevertheless a vague term over which there is legitimate disagreement between educators who favor a practical

education that will prove useful to students in the workplace and those who favor a purer aesthetic approach to learning—that is, knowledge for the sake of knowledge. Both arguments favor a basic core curriculum of English, mathematics, science, social studies, foreign languages, fine arts and physical education. The “practicalists,” however, favor reducing the number of years of study of these subjects in high school from four to three each and leaving the equivalent of at least one full year for such practical courses as applied mathematics, technology, workplace skills, and so on.

(See also NO CHILD LEFT BEHIND.)

academic rank The title given to college and university teachers and researchers. Most American colleges and universities have five academic ranks; instructor, lecturer, assistant professor, associate professor and professor, with annual salaries for all faculty averaging more than \$70,000 in 2006, for nine months of full-time teaching, with wide variations by gender:

Rank	Men	Women	Differential
Instructors	\$41,692	\$40,431	3.1%
Lecturers	48,776	44,573	9.4%
Assistant professors	58,296	54,052	7.85%
Associate professors	68,990	64,436	7.1%
Professors	97,642	85,747	13.9%

Source: American Association of University Professors

Salaries in higher education have increased steadily by about 3% to 5% a year over the last decade, but they have varied widely according to the type of institution. Faculties at two-year colleges earn 5% to 10% less than their counterparts at four-year institutions, and public two-year colleges offer faculty about 9% lower salaries on average than public four-year schools do, while salaries at private two-year colleges average about one-third less than those

at private four-year schools and 16% less than those at public two-year colleges. The average salary of full-time professors at doctoral institutions was \$108,404 in the 2005–06 academic year; private, independent doctoral institutions paid an average of more than \$131,000 a year and comparable public institutions offered about \$102,000. The average salary for full professors was more than \$80,000 at master’s institutions, more than \$77,000 at baccalaureate institutions, and \$66,000 at two-year colleges. At the lowest academic rank, instructor salaries ranged from about \$40,000 at private two-year colleges to about \$53,700 at church-related doctoral institutions.

Within each academic rank, salaries vary widely according to academic disciplines. At the undergraduate level, law professors earned the highest salaries at four-year institutions, averaging about \$137,000 in the 2005–06 academic year. In contrast, professors of liberal arts and sciences, general studies, and humanities earned an average of only about \$74,000, the lowest average in the academic mainstream and second only to the \$68,000 average of theology professors. After law, the best-paid professors in four-year colleges and universities were those who taught engineering (about \$108,000) and business management, marketing and related subjects (about \$103,000). The next-highest paying fields for professors were architecture (\$70,427), area/ethnic/cultural/gender studies (\$69,098) and computer and information sciences (\$69,024) in private institutions, and computer/information sciences (\$77,309), physical sciences (\$69,613) and any of three areas in public institutions: biological and biomedical sciences (\$68,815), natural resources and conservation (\$68,516) and agriculture and related sciences (\$68,432). The highest-paid faculty in graduate education were medical school professors, whose annual earnings range as high as \$3 million. In contrast, professors of education earned an average of \$57,000.

Until the development of universities in the 19th century, the title of professor applied to all college teachers whose positions were endowed. With the establishment of graduate schools and the proliferation of professors at such early universities as Columbia, Harvard, Cornell, Chicago, Michigan and Wisconsin, those with advanced degrees demanded titles that differentiated them from their less experienced or less learned teaching colleagues.

Depending on the institution, rank now depends on one or all of the following: academic and field experience and training, academic output (research and published articles and books), teaching ability, length of service in the profession and at the particular institution, and contributions to the institution. There are no universal rules governing academic rank. Some faculty members are promoted successively, while others are simply appointed to one or more of the upper ranks, sometimes immediately upon earning a doctorate. Some institutions leave academic rank to faculty committees in each department; others allow academic officers to share the responsibility and even award incoming teachers an academic rank independently. Some institutions automatically grant tenure to faculty when they obtain the rank of associate professor; others grant tenure on an individual basis, regardless of rank.

academic standard A broad-based criterion with which to compare scholastic performance, as measured by STANDARDIZED TESTS. An academic standard may be criterion- or performance-based and reflect knowledge of a specific academic discipline, or it may be norm-based and compare individual performance with average student performance. New York City's criterion- or performance-based standards, for example, require every third grader to "be able to write about, discuss and summarize the plot, setting, character and main ideas in a book"

and to "use periods, question marks, capital letters, exclamation marks and contractions correctly" to earn promotion in language arts. Promotion from third to fourth grade mathematics requires the ability to subtract two numbers, each less than 10,000; find the distance (perimeter) around polygons; and locate points on a grid and on a map.

Academic standards have been at the center of controversy in American elementary and secondary education for decades—a result of widely differing academic achievement of students of different races and gender and from different regions of the United States. The 1994 federal GOALS 2000: Educate America Act called for establishment of unified national academic standards to eliminate regional and local differences in academic standards and achievement. In 1997, the National Assessment Governing Board began a five-year program to develop new tests to be given nationwide to measure academic performance levels of American elementary and secondary school students. The United States was one of the only nations in the world without national education standards, and the plan to establish such standards ran into immediate opposition from state officials who saw national standards as an unconstitutional encroachment on the exclusive constitutional authority of individual states and local districts to control education. The Tenth Amendment of the U.S. Constitution specifically reserves to the states all powers not delegated to the federal government. There is no mention of the word *education* in the Constitution.

To stimulate establishment of higher academic standards by the states, the U.S. DEPARTMENT OF EDUCATION introduced a national testing program—NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS (NAEP)—in the early 1990s, and almost all the states, stung by mounting public criticism, began developing schemes to raise academic standards for each grade and to

Percentage of Fourth Graders Exhibiting Minimum Reading Proficiency

	State Tests	NAEP (Federal) Test
Arkansas	61%	28%
California	39%	21%
Colorado	63%	37%
Connecticut	69%	43%
Florida	60%	32%
Maine	49%	36%
Massachusetts	56%	40%
Michigan	75%	32%
Mississippi	87%	18%
North Carolina	81%	33%
South Carolina	31%	26%
Texas	85%	27%
Vermont	81%	37%
Wisconsin	80%	33%

monitor progress with standardized tests. Although students in 17 states produced startlingly high results, their counterparts in 24 other states scored so poorly that many schools were forced to ignore test results and to promote or graduate students despite dismal test scores—or see entire student bodies retained. Some educators called state testing a national educational disaster, and state after state immediately began lowering and resetting acceptable test grades to absurdly low levels. Two of three students in Chicago’s third and sixth grades were required to attend summer school after the first tests were administered, and half had to repeat their grades in the fall even after a full summer of instruction. Only one of 10 Arizona high school sophomores passed that state’s math test, while only 7% of Virginia students of all ages managed to pass that state’s tests. Wisconsin students did so poorly that the state abandoned testing requirements temporarily, while Massachusetts lowered the passing grade on its English and math tests rather than block graduation of 83% of Latino students, 80% of its black students,

43% of its white students and 41% of its Asian students. New York also reduced the minimum passing grade to permit student promotion to continue smoothly. Los Angeles and San Diego would have been forced to fail half their students if they had applied the academic standards imposed by the tests.

In lowering their academic standards to allow students to earn promotion to higher grades, however, many states unwittingly plunged their students into an abyss of near ILLITERACY and INNUMERACY. Although 90% of Idaho’s fourth graders (nine-year-old) exhibited proficiency in mathematics on the state tests, NAEP found only 41% of them proficient on its tests. New York claimed that 85% of its nine-year-olds met its standards of proficiency in mathematics, but only 36% exhibited proficiency on the federal test. The same variations emerged in reading proficiency in Georgia, Alabama, Tennessee, and other states recording astonishingly high scores on states tests, but fewer than 25% to 30% demonstrated reading proficiency on the federal NAEP test. Similar variations emerged in more than a dozen other states.

At the heart of the academic standards controversy is whether students should be penalized for the failure of teachers and schools to establish and maintain an acceptable level of ACADEMIC QUALITY. Those in favor of tough academic standards say it is unfair to allow students to graduate with academic skills too low to permit them to function in the job market. Those opposing academic standards say it is unfair to impose such standards on children until legislators raise academic quality of schools by investing more funds to relieve overcrowding in classrooms, improve teacher training, modernize and expand school plants and teaching materials.

(See also COMPETENCY-BASED EDUCATION; GOALS 2000; NO CHILD LEFT BEHIND; STANDARDIZED TEST; STATES, EDUCATIONAL COMPARISON)

academy A specialized school, whose specific purpose has changed radically from century to century and culture to culture. It has three modern connotations in the United States: an exclusive secondary school to prepare for college; a military school or college; and a specialized institution that provides instruction, funding and public recognition of individual artists, writers, crafts practitioners and scientists.

Akademia was originally the name of a park-like olive grove outside Athens, named for the Greek mythological hero Akademos. It was here that Plato began teaching philosophy in 387 B.C. The Academy, or Platonic school of philosophy and learning that he founded, lasted 900 years, until its suppression by Roman Christian emperors as a form of paganism. The term academy remained synonymous with scholarship, however, and in 1563 the first of the specialized academies—the *Accademia di Disegno*, for artists—was founded in Florence, Italy, for artists. The concept quickly spread to other cities. The Academy of St. Luke opened in Rome in 1593, the Royal Academy of Painting and Sculpture in Paris in 1648 and the Royal Academy of Arts opened in London in 1768. Today, specialized academies sponsor the work of a wide range of scientists as well as artists, writers and musicians.

At the same time as the Italians were opening specialized academies, the French and German courts founded academies to teach the noble arts to the sons of the nobility and the landed gentry. Unlike schools for commoners, the *courtly academies* taught Latin, modern languages, mathematics and exercises to keep young men fit, train them in the use of arms and prepare them for lives at the highest levels of society.

Limited to secondary education, the concept of the courtly academy quickly spread to the Low Countries, Scotland, England and, eventually, America, where unlike church-

sponsored schools, they became centers of dissent. They drew to their faculties many ministers who had either quit or been ejected from the established Church of England for questioning church authority. The break from the established church allowed these clerics to bring a spirit of intellectual and educational innovation to the academies they founded. They used English, rather than Latin, for instruction and, instead of limiting the curriculum to church doctrine, added sciences, politics and philosophy. Most important, they introduced freedom of inquiry as a fundamental concept of academic education.

The concept was a narrow one, however, and limited to scientific discovery and discussions of religious philosophy and relations between man and God. Almost all American academies were either church sponsored or owned and were operated by individual clerics or devout laymen. By the late 1800s, Presbyterian clergymen alone operated more than 50 academies. Although they were dissenters from the Church of England, none questioned God's existence or the fundamentals of church doctrines.

In contrast to the classical academies, a handful of practical laymen—almost all of them in major cities—also founded academies in the early 18th century. BENJAMIN FRANKLIN, for example, founded the Public Academy in the City of Philadelphia to prepare young men for life in the colonies by teaching them such practical subjects as mechanics, as well as classical subjects. Franklin also proposed equipping his school with “a Library . . . with Maps of all Countries, Globes, some mathematical instruments, and Apparatus for experiments in Natural Philosophy (physics), and for Mechanics.”

Most of the early academies were private schools for training the sons of landowners, merchants and noblemen to assume their fathers' places when they reached adulthood. Girls were forbidden entry until 1792, when

Sarah Pierce opened the nation's first school for young women—the Litchfield Female Academy, in Litchfield, Connecticut. Pierce trained such future pioneers of women's education as CATHERINE BEECHER. Early in the 19th century, Catherine Beecher, along with EMMA WILLARD and MARY LYON opened three more girls' academies, whose successes provoked a rapid expansion in women's education. From 1825 to 1850, about 6,000 women's academies opened their doors to more 240,000 students.

Despite the wealth and position of the families whose children attended such academies, the level of education varied widely, depending on location and the sophistication of students. Isolated schools in the wilderness were little more than elementary schools. Schools in such major cities as Boston, on the other hand, offered college-level courses. Most, however, were the equivalent of today's secondary school.

Depending on the level of schooling, some academies later evolved into colleges such as the United States Naval Academy at Annapolis, Md., and the United States Military Academy at West Point, N.Y. Benjamin Franklin's Public Academy in Philadelphia later became the College of Philadelphia and, in turn, the University of Pennsylvania. A few other academies remain today among America's most academically demanding (and still exclusive) secondary schools. They include the Phillips Academy at Andover, Mass. (founded in 1778), Phillips Exeter Academy, in Exeter, N.H. (founded in 1783) and Deerfield Academy, Deerfield, Mass. (founded in 1798).

The vast majority of early 18th-century academies, however, disappeared as public schooling emerged as the dominant provider of education in the last half of the 19th century and made them redundant.

Accelerated Schools Project A national program to reform and improve education of

socially and economically deprived, "at-risk" students in public schools. Developed at STANFORD UNIVERSITY in 1986, after a five-year study of AT-RISK STUDENTS, the Accelerated Schools program replaces conventional remedial programs for disadvantaged students with academic enrichment programs and accelerated teaching methods usually reserved for privileged, GIFTED students. One of three national programs designed to improve education of deprived children, the Accelerated Schools Project has spread to more than 1,500 public schools across the nation.

Created by Stanford education professor Henry M. Levin, the Accelerated Schools Project has scored dramatic improvements in academic achievement levels of elementary school students who had been six months to two years behind grade level in reading and mathematics before their schools adopted the Accelerated Schools approach to education. Two years after their schools became Accelerated Schools, most students either performed at or above grade level, while major discipline referrals and grade retention rates dropped by more than 75%. Moreover, the Accelerated Schools Project, according to Prof. Levin, transforms the typical inner-city school from a place where "gangs, vandalism, fighting, poor attendance, teacher turnover, low achievement were chronic conditions . . ." into "a place of joy for its students, staff, and parents. . . ."

Levin defines "at risk" students as children "from poverty backgrounds who are at-risk of educational failure. Such students are heavily concentrated among minority groups, immigrants, non-English-speaking families, single-parent families, and poverty populations." Levin estimates that about 30% of students in primary and secondary schools are educationally at risk, with the percentage rising to more than 50% in "many of the major cities of the U.S." and likely "to rise sharply" with increased immigration and poverty.

"At-risk students," Levin says, "enter school behind other children academically, and they fall farther and farther behind the longer they are in school. Over half fail to complete high school, and those that do are performing academically at the eighth grade level." His five-year study found that most conventional schools "embrace organizational, curricular, and instructional strategies that contribute to reduced expectations and stigmatization of at-risk students, uninspiring school experiences . . . [and] assure glacial progress and high failure rates. At-risk students," Levin concluded, "must learn at a *faster* rate than more privileged students—not at a slower rate that drags them farther and farther behind. An enrichment strategy is called for rather than a remedial one."

In designing the Accelerated Schools Project, Levin cited the philosophy of John Feldhusen, an authority on education of the gifted and talented:

Schools should abandon efforts to identify "gifted students" as though they were a biologically distinct category of human beings and concentrate instead on: (1) searching for talent or strengths in all children, (2) searching for those who might have very high levels of talent or precocity in a 'worthwhile area' of human endeavor, and (3) seeking to provide the best instruction to help youth develop their talents to the fullest.

The Accelerated Schools Project attempts to do just that by instituting three major reforms in public schools operations. First, it insists that each Accelerated School declare unequivocally its educational goals for its students and its "action plan" to achieve those goals. Second, Accelerated Schools must obtain school-site empowerment, with local administrators, teachers, other staff, parents and students participating in determining curriculum, instructional strategies and materials, personnel,

allocation of school resources and other school activities.

"Existing schools . . . are largely dominated by decisions made by entities that are far removed from the school site and classroom," Levin points out.

Federal and state governments and central offices of school districts have established a compendium of rules, regulations, directives, policies, laws, guidelines, reporting requirements, and "approved" instructional materials that serve to stifle educational decisions and initiative at local school sites. . . . [C]ompliance with these policies ensures failure, not success, as the historical record has shown.

The third element in the Accelerated Schools Project is to build on student strengths. Levin's research found at-risk children possessing many assets that can accelerate the learning process, if teachers identify them and use them as a basis for engaging students in the educational process. Among them are "interest and curiosity in oral and artistic expression, ability to learn through manipulation of appropriate learning materials . . . and a capacity for learning to write prior to mastering reading skills."

The Accelerated School program usually involves use of "rich language" (writing, speaking, listening, reading) across all subjects, even mathematics, with an early introduction to writing and reading for meaning. Teachers approach students with high expectations and "active learning experiences are provided through independent projects, problem solving and applying learning to concrete situations. By applying academic concepts and skills to real-life problems and events, students see the usefulness of what they are learning."

Transformation of a conventional school into an Accelerated School takes about six years, although academic improvement is evident after two years. Involved is the training of men-

tor teachers of "Accelerated Schools coaches" at eight-day training workshops held at the Project's university-based centers in cities across the United States. The coaches then return to their schools to help train coworkers.

Another key to developing an Accelerated School is to involve parents in day-to-day school operations and decision making. Levin calls parents "underutilized resources," who want their children to succeed and "can be powerful allies if they are placed in productive roles." Parent participation in Accelerated Schools often reaches between 90% and 100%.

(See also COALITION OF ESSENTIAL SCHOOLS; COLEMAN REPORT.)

acceleration A compressed rate of academic progression through high school and college to allow students to complete their work and graduate in less time than normal.

Acceleration has been a source of some controversy. One argument in favor of acceleration in elementary and secondary education is that it eliminates the boredom and restlessness that gifted children often suffer when forced to progress at too slow a pace. A second argument in favor of acceleration is that it cuts total costs of education. About 50% of American college students fail to complete the work for their undergraduate degrees—often because they cannot afford the costs. A three-year program at a college charging \$25,000 a year cuts the cost of an undergraduate degree by 25%, and some colleges have already compressed their traditional four-year programs into three years or less. Acceleration, these colleges point out, also expands the number of college seats available to prospective students.

Those in favor of acceleration contend that it is a standard process in every area of child development except academics. Students of instrumental music, for example, automatically accelerate as fast as their talents allow. More-

over, acceleration was the norm at the turn of the 20th century, when a combined college and medical school degree program, for example, ran six years instead of the current eight.

Opponents of acceleration contend that many intellectually mature children are not socially, emotionally or physically mature enough to attend classes with older students. Skilled educators, however, have established programs that combine the best aspects of acceleration without interfering with the normal social, emotional and physical development of participating students. Educators who work with gifted children strongly recommend psychological evaluation to help determine how well a child may adapt to acceleration. The Gifted Child Education Resource Institute at Purdue University claimed it "never had a child who accelerated after assessment who ran into difficulties."

The simplest and most widely available acceleration programs are ADVANCED PLACEMENT (AP) high school courses, which are equivalent to freshman-level college courses. AP courses are offered in a wide variety of subjects such as English, mathematics, history, science and foreign languages and may entitle students to college credits if they obtain high enough scores on the College Board Advanced Placement examinations.

Among the more complex acceleration programs is the university-in-the-school format, which allows gifted high school students to enroll in a limited number of college courses while still officially enrolled in high school. The college credits earned from such courses are transferrable to whatever college the student eventually attends.

Some high schools discourage their students from enrolling in such programs because school funding is based on average daily attendance, and public schools lose money when students leave the campus, regardless of the reason. Syracuse University circumvented

this problem with a program called PROJECT ADVANCE, which trains high school teachers to teach college-level courses in high school classrooms to eleventh graders. Project Advance, credits are usable when students enroll at Syracuse or any other accredited college or university. Kenyon College, in Ohio, and Hofstra University, in New York, have similar programs.

In addition to advanced programs during the school year, many colleges operate summer institutes that allow gifted children to speed through some of their high school courses more rapidly than their high schools would ordinarily permit. Such courses are of value only in high schools that allow students to "test out" of a required course at the beginning of the school year and jump ahead to the next level of study. Some summer institutes also offer college level courses for credit. For many years, a number of colleges and universities have also offered experimental programs for younger children whose intellectual maturity obscures their lack of social and physical maturity. Such programs allow students to progress intellectually as rapidly as they choose, while protecting them from the social and physical consequences of attending adult institutions.

In the 1920s, Pasadena City College set up a school for younger gifted children that combined eleventh and twelfth grades of high school with the first two years of college. In Great Barrington, Mass., Simon's Rock of Bard College has been doing much the same thing for gifted youngsters who have completed tenth or eleventh grades and are intellectually ready to handle college-level studies but too young to be comfortable with an older student population. The average age of freshmen at Simon's Rock, which offers both associate and full B.A. degrees, is 16, and the average age of the entire student body is 18.

The most famous effort by a college to identify and recruit young gifted children was

that of Johns Hopkins University, in Baltimore. Psychology professor Julian C. Stanley founded the program in 1971, when he tried to identify young mathematical geniuses whose minds functioned at levels incompatible with normal high school life. Called the Consortium of Talented Youth (CTY), the program allowed students as young as 15 to enroll and have access to any and all college courses. Many skipped four grades of high school to enroll, and some became doctoral candidates by the time they were 20.

accountability The obligation to provide proof of having fulfilled one's responsibility. In education, teachers and school administrators have traditionally made students accountable for their whereabouts, for completion of homework assignments and for their work and behavior in class and school. More recently, however, students, parents and state authorities have started holding teachers and school officials responsible for their effectiveness as teachers and administrators.

At the student level, accountability is usually taught through "cooperative learning," in which students are divided into several groups. Each group is then responsible for one element of a large project that can only be completed if each fulfills its responsibility. Thus, students are not only accountable to their teacher, they are accountable to their peers, who can often exert far more influence than teachers.

Teacher and school accountability is a relatively new concept that developed in the 1960s, as basic skills test scores of public school students began declining across the United States. The decline coincided with a deterioration of the American balance of international trade. As a torrent of lower priced, better quality products from Japan and West Germany displaced American products from the market, American industry blamed American public schools and their teachers for failing to teach future workers

adequate skills to compete with foreign workers. To try to make teachers and schools more accountable, some states introduced periodic retesting of teachers to measure their skills and knowledge.

Teachers unions have bitterly fought the accountability movement, saying public school teachers should not be held accountable for student competence until they, the teachers, have full control over the teaching curriculum and program. Teachers unions say that the failures of public schools reflect the failures of politicians, school boards and parents, who control what is taught and how it is taught in most public schools and have stripped teachers of much of their traditional authority.

accreditation The evaluation of a school or college by one or more of the eight regional ACCREDITATION ASSOCIATIONS and the more than 90 specialized groups that certify professional and occupation programs. Not to be confused with state certification, accreditation is purely voluntary and is an indication that a school is operating at standards well above those required by state law.

Every state requires every school to be certified, which is nothing more than legal approval to operate and may be based solely on conforming to state safety laws. The vast majority of public elementary schools are not accredited, although all are certified. Some 40% of public high schools are also unaccredited—some because of low academic standards, others because they cannot afford the costs involved in the accreditation process.

Accreditation involves a complex examination of a school's or college's educational goals and standards by teams of respected educators, who volunteer to conduct what amounts to a peer review of a sister school or college. Standards differ from region to region, but all eight accrediting associations demand that member schools clearly state their educational

goals and their methods for achieving those goals. The goals may vary depending on the student community and whether the school is public, private or church-related, but whatever the goals are, accreditation depends on a school's success in achieving them or a plan for doing so within a specified period. A private college-preparatory school whose goal is to send 90% of its students to college, for example, might have difficulty obtaining accreditation if, say, only 60% of its graduates gained admission to college.

Some other accreditation association standards include requiring all elementary and secondary school teachers to have at least a bachelor's degree from an accredited college and at least eight college courses in each subject they teach. Principals must have at least a master's degree in some regions. Some associations specify the minimum acceptable number of books and periodicals a school must have in its library—no less than 4,000 books, no matter how small the school, and at least 10 books (not including textbooks) for each student. Some associations also list acceptable teacher-pupil ratios, minimum acceptable student achievement levels, the minimum number of subjects and courses the school must teach in each grade and the acceptable materials it must provide.

Accreditation associations have come under attack for their failure to strip inferior schools and colleges of accreditation. Many university officials have also criticized the associations for broadening accreditation standards to include a "cultural diversity" standard that evaluates a college's minority hiring record (see AFFIRMATIVE ACTION) and the multicultural content of its curriculum. Complicating the accreditation process was the explosion of FOR-PROFIT COLLEGES into a \$20 billion-a-year industry that largely operates online without accreditation from traditional ACCREDITATION ASSOCIATIONS. Lack of accreditation, however, has left thou-

sands of students unable to transfer the costly credits from for-profit courses to accredited, degree-granting institutions.

accreditation associations The more than 90 voluntary and involuntary associations responsible for ACCREDITATION of American schools, colleges, graduate schools and professional and occupational programs. Almost all are independent and unaffiliated with any government agency.

Their origins go back to the 19th century, when a group of representatives from private academies in the Northeast met with representatives of several prestigious colleges to work out preparatory school curricula and standards that would mesh with college offerings and thus assure students a smooth transition into college.

They formed eight regional associations, each of which was responsible for accrediting public and private elementary and secondary schools and undergraduate colleges: the New England Association of Schools and Colleges (Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut); Connecticut Association of Independent Schools; Middle States Association of Colleges and Schools (New York, New Jersey, Pennsylvania, Delaware, Maryland, District of Columbia Puerto Rico, U.S. Virgin Islands); New York State Association of Independent Schools; Southern Association of Colleges and Schools (Kentucky, Virginia, Tennessee, North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Louisiana, Texas); North Central Association of Colleges and Schools (North Dakota, South Dakota, Minnesota, Wisconsin, Michigan, Ohio, West Virginia, Indiana, Illinois, Iowa, Nebraska, Wyoming, Colorado, Kansas, Missouri, Arkansas, Oklahoma, New Mexico, Arizona); Northwest Association of Schools and Colleges (Alaska, Washington, Oregon, Idaho, Montana, Nevada, Utah); Western Association

of Schools and Colleges (California, Hawaii, Guam, American Samoa, Republic of Palau, Republic of the Marshall Islands, Federated States of Micronesia, Commonwealth of the Northern Mariana Islands). In 1995 the U.S. Department of Education added a new national accrediting agency for colleges and universities, namely the AMERICAN ACADEMY FOR LIBERAL EDUCATION. Made up of conservative, "back-to-basics" scholars such as Columbia University professor JACQUES BARZUN, the academy was given authority to certify whether a college was qualified to receive federal financing.

The NATIONAL COUNCIL FOR THE ACCREDITATION OF TEACHER EDUCATION is the national accreditation organization for undergraduate and graduate professional education programs for elementary and secondary school teachers, school service personnel (counselors) and school administrators. To ensure the legitimacy of accrediting agencies, a private agency, the Council for Higher Education Accreditation and the U.S. DEPARTMENT OF EDUCATION keep lists of institutional and specialized accrediting agencies recognized by the federal government.

achievement tests Devices for measuring a student's accumulated knowledge and skills. Depending on the age of the student and the test objective, test administrators may use oral, written or performance tests in which students demonstrate their talents, physical skills or manual dexterity.

Tests may be objective or subjective, with the former designed to eliminate scorer unreliability by limiting student responses to one or more specific choices. Free-response, or subjective, tests allow the test-taker to determine the form or content of the answer, although essay questions obviously limit the answer to points relevant to the core topic. Scorers also have free rein in judging the answer and can deduct points for incorrect statements, omission of

relevant points, excessive length, grammatical errors, poor syntax or writing style and a wide variety of other reasons.

Verbal, oral or performance tests may be designed as either speed or power tests. Speed tests limit the time given to answer all the questions, and scores are based on the total number of correct answers. Few respondents are expected to finish the entire test. Power tests provide more time, but vary the difficulty of the questions to an extent that no test-taker can possibly know the answers to all questions. Speed tests tend to be used for measuring mathematical abilities and vocational skills. Power tests are generally used to measure academic achievement, although some elements of both power and speed tests are found in almost every type of test.

Teacher-designed tests to measure specific knowledge taught in that teacher's class are generally more accurate measures of a student's knowledge than standardized tests that may require knowledge that not every student has acquired. No test, however, can measure all knowledge a student possesses about any subject, and for that reason, testing has become a center of controversy among educators. In simplest terms, knowing when the Constitution was signed or the ability to repeat its contents verbatim says nothing about a student's understanding of that document. Critics of testing say subjective evaluation is a far better way of measuring a student's real knowledge than testing.

Although 49 states administer standardized achievement tests to elementary, middle and high school students, the tests vary widely in quality, depending on whether they are products of state departments of education or commercial test publishers. With only a handful of exceptions, state-developed tests tend to be simplistic, often unreliable measures of academic achievement. Commercially prepared tests, on the other hand, have evolved over many years in all parts of the nation and tend

to be accurate, reliable measures. The most widely used commercially prepared tests are published by three test publishers, CTB/McGraw-Hill, Harcourt Educational Measurement and Riverside Publishing Company. These tests include:

- California Achievement Tests, published by CTB/McGraw-Hill, are divided into 10 overlapping levels for testing reading, spelling, mathematics, language and reference skills of students from kindergarten through twelfth grade.
- Iowa Tests of Basic Skills, developed and published by Riverside Publishing Co. to measure performance of students from kindergarten through twelfth grade in reading, language arts, mathematics, social studies, science and information sourcing.
- Iowa Tests of Educational Development, developed and published by Riverside Publishing Co. to measure intellectual and evaluative skills of high school students in everyday life. The nine tests measure vocabulary; reading comprehension; language skills; spelling; mathematics concepts and problem solving; computation skills; and analytical skills in science, social studies and general information.
- Metropolitan Achievement Tests, published by Harcourt Educational Measurement to assess "critical thinking" of age groups in kindergarten through twelfth grade in reading, mathematics, science, language and social studies.
- Stanford Achievement Tests, published by Harcourt Educational Measurement to measure achievement in all academic areas from kindergarten through thirteenth grade.
- TerraNova Comprehensive Tests of Basic Skills (CTBS), published by CTB/McGraw Hill to test achievement of K-12 students in science, social studies and reading/language arts, including word analysis, vocabulary, language mechanics and spelling.

Among the best-known and most commonly used achievement tests for high school juniors and seniors are the SCHOLASTIC ASSESS-

MENT TESTS prepared by the COLLEGE ENTRANCE EXAMINATION BOARD and the college entrance examinations of the ACT ASSESSMENT PROGRAM.

In addition to group achievement tests, counselors and special-education professionals often rely on individual achievement tests in various subject areas for students who, for a variety of reasons (anxiety, disabilities, and so forth), are unable to function normally in group testing situations. Although individual achievement tests do not rely on exact timing, they usually last 30 to 60 minutes and can be administered orally. The most widely used are the Basic Achievement Skills Individual Screener (grades 1 to adult), the Peabody Individual Achievement Test (K to adult), the Key-Math Diagnostic Arithmetic Test (K–6) and the Woodcock Reading Mastery Tests (K to adult).

ACT Assessment Program A battery of four college entrance examinations lasting about three hours and consisting of four parts: English (45 minutes; 75 questions), Mathematics (60 minutes; 60 questions), Reading (35 minutes; 40 questions) and Science Reasoning (35 minutes; 40 questions). The English section measures knowledge of usage and mechanics and rhetorical skills. The mathematics test covers pre-algebra, elementary algebra, coordinate geometry, plane geometry and trigonometry. The reading test is a broad measure of knowledge in social studies, the sciences, the arts and literature, and the science reasoning test measures specific knowledge in the sciences and the ability to apply formulae. Sponsored by the American College Testing Program, the tests consist entirely of objective questions and are scored from 1 to 36. Although the average student score is 21, ACT has established so-called benchmark scores for each subject, based on studies correlating each score with the likelihood of a student's achieving a college grade of C in the particular subject. The benchmark ACT scores were 18 in English, 22 in mathe-

matics and 24 in science. Average student scores in each subject in 2006 were 20.6 in English, but only 20.8 in mathematics and 20.9 in science, with less than half the test-takers meeting the college-readiness benchmark in math and only one in four scoring as high as the benchmark in science. Only about 10% of students score 28 or better. Although most Eastern colleges accept ACT Tests, the ACTs are used primarily by colleges outside the Northeast. One-third of all four-year colleges require no standardized tests for admission, however. Special nonstandard accommodations for taking ACTs are available to students with documented visual, hearing, physical or learning disabilities.

(See also APTITUDE TESTING.)

acting out A term with dual meanings in education. It can refer to translation of fantasies or unconscious feelings into overtly destructive or antisocial action such as aggressive or sexual behavior. Acting out also refers to a valuable teaching and learning tool using dramatic performances by students who act out a story they have read or created. Aside from providing an easy-to-remember visualization of a story, acting out makes learning more fun, helps improve children's speech and teaches them to work together. It also encourages creativity and self-expression, channels children's natural restlessness into a creative learning activity, helps teach the relationship between words and various body parts and body movements, and helps shy children learn to feel comfortable expressing themselves publicly.

active learning A relatively new term for an updated form of indirect instruction, which JOHN DEWEY developed in his experimental LABORATORY SCHOOL at the University of Chicago in 1896. Pedagogical standards for active learning were developed in 1989 by the

70,000-member National Council of Teachers of Mathematics (NCTM), which called *DIRECT INSTRUCTION* of mathematics from teacher to student a “bankrupt” pedagogy.

Dewey was the first, however, to express the belief that children learned best when they acquire knowledge doing things that interest them and are helped only indirectly by teacher suggestions. By letting four- and five-year-olds “play house,” Dewey’s teachers taught children to cook, sew, cut and nail wood to build “furniture,” and “indirectly” taught them the necessary reading, writing, mathematical and scientific skills to make their “play” successful, educational and, in the end, more satisfying because of the visibly “professional” quality of the project.

Older children learned to “build” a farm, using blocks for each of the buildings and planting imaginary crops on a large sand table, which they divided into fields for different crops and thus had to learn to measure and work with fractions. They learned volume by counting bushels and how to calculate and use money by pretending to take their crops to market. They needed signs to label crops and set up the marketplace. Building the farmhouse and out-buildings meant drawing plans, carefully labeling and measuring, and adding and subtracting to use the correct number of blocks. Older children studied colonial life, prehistoric life, ancient history and other subjects in much the same way.

Today’s active learning is much the same, although the new NCTM standards offer a wider variety of pedagogical approaches. For example, teachers in one program foster independent thinking by refusing to tell students whether their answers are right or wrong. Instead, students work in pairs, solving problems and explaining their answers to their partners. When convinced they are correct, they explain their answers to the rest of the class, which eventually must decide on the accuracy

of the solutions. In another class, students are given the dimensions of a fictional giant in a literary work and asked to build a scale model pencil appropriate for him.

Although advocates of active learning contend students gain a better understanding of mathematics, test scores have showed no difference in achievement test scores from those taught by traditional direct learning techniques. In contrast, students who emerged from Dewey’s experimental schools scored significantly higher than students from conventional schools.

adapted (adaptive) physical education A physical education program modified to accommodate physically or mentally handicapped children. An outgrowth of armed services rehabilitation programs for injured servicemen and -women, adaptive physical education tries to provide as many elements as possible of conventional physical education. Almost all accredited schools and colleges have added adaptive physical education programs since the “mainstream” movement (see *MAINSTREAMING*) began encouraging handicapped students to attend conventional instead of special schools. Federal legislation requires all public schools to provide the handicapped with as many physical educational facilities as feasible. In recent years, most schools have expanded the scope of adaptive physical education to include obese children. By 2000, obesity was spreading at epidemic rates in America and was first among the nation’s top 10 health problems. At the beginning of 2006, 49.3% of American children were deemed obese, and about 40% of all children were prediabetic. A significant number were also suffering hypertension, high cholesterol and early-stage heart conditions.

adaptive programming The sequential ordering of self-teaching instructional materi-

als to maximize learning and retention of learned materials. An outgrowth of B. F. SKINNER's research in learning reinforcement, adaptive programming breaks materials down to the smallest possible units, or "frames," and does not permit continuation to a new unit until the student has mastered the previous unit and proved so by answering a series of questions. Students progress from question to question regardless of whether their answer is correct or not, because every right or wrong answer provides the student with a learning experience and reinforces learning of the knowledge unit in that frame. Although usually associated with teaching machines and computers, adaptive programming may be used to arrange materials in textbooks and classroom presentations.

Addams, Jane (1860–1935) Founder of Chicago's Hull-House, which was one of America's first settlement houses and a major educational center for social workers, social reformers and working women. Cowinner of the 1931 Nobel Peace Prize—with Columbia University president NICHOLAS MURRAY BUTLER—Addams was one of America's premier social reformers.

Opened in 1889, Hull-House grew into a settlement of 13 buildings, where prominent social reformers and social workers came to live, exchange ideas and offer educational and cultural opportunities to the poor immigrant population of the surrounding neighborhood. Based on Toynbee House, a similar institution in London, Hull-House gave rise to the settlement house movement in the United States and served as a model for hundreds of similar institutions that sprang up in cities across the nation.

Hull-House facilities included a day-care center for children of working women, a gymnasium, a community kitchen, a boarding house for working girls, living facilities for members, lecture halls, a reading room, an



Social reformer and Nobel laureate Jane Addams with some of the children for whom she founded Chicago's Hull-House, the first settlement house in the United States. (*Library of Congress*)

exhibition hall and a theater and concert hall. Its classes included college-level "extension" courses in a wide variety of subjects, as well as training in art and music and in many crafts. In addition to its regular classes, Hull-House operated a summer school and sponsored art exhibitions, regular Sunday concerts and plays by its own Hull-House Players.

With the help of her college classmate ELLEN GATES STARR, Addams designed the Hull-House curriculum not as an adjunct to existing college and university offerings but as a new and unique type of independent educational institution, where well-educated, cultured residents could share their education, skills and knowledge with the impoverished

residents of the surrounding slums. Besides herself, Starr and the other reformer-teachers who lived at Hull-House, her settlement house drew such notable educators as John Dewey to conduct classes there. About 60% of Hull-House residents were women and almost 90% were college graduates intent on bringing the benefits of a college education to working people.

In addition to their duties as teachers, Hull-House residents also were political activists who demanded that the city provide public libraries, parks, playgrounds and schools for their neighbors in the surrounding slums. Addams herself was also a leader of the pacifist and women's suffrage movements, and she helped win passage of laws to regulate tenement house safety, to limit women's workdays to eight hours, to establish factory safety inspections, to provide workmen's compensation insurance and to establish special courts for juvenile offenders. All the Hull-House facilities except the residence building were demolished in 1963, by which time public agencies had taken over most public service functions of settlement houses and made the latter almost superfluous.

adjunct A term referring to a temporary or part-time instructor at a college or university. Adjuncts may hold the same range of academic rank as full-time, permanent faculty—that is, adjunct professor, adjunct associate professor and so on. Like all part-time employees, adjuncts provide enormous savings for colleges and universities over the costs of full-time faculty. Although they make up nearly 33% of the faculty at four-year colleges and universities and 66% of the faculty at two-year colleges, adjunct faculty are paid only by the credit hour in courses they teach and are usually ineligible for union membership and such fringe benefits as health insurance and pensions. They are not eligible for tenure and engaged on a term-to-

term basis only. Colleges may end their employ at the end of each term by simply not renewing their contracts.

Despite their less favorable working conditions, adjuncts nevertheless provide students with educational benefits often unavailable from full-time faculty. Most adjuncts teach pre-professional courses such as accounting, advertising, journalism, and so on, and they are usually full-time practitioners of the trades they teach. They are, therefore, often more skilled and up-to-date on the latest developments in their field than full-time faculty who spend all their time on campus.

Adler, Felix (1851–1933) Founder of the New York Society for Ethical Culture, which was a major force for educational reform and center of the worldwide Ethical Movement. The son of a rabbi, Adler graduated from Columbia University in 1870, and after getting his doctorate in Germany, became professor of Hebrew and Oriental literature at Cornell University, Ithaca, New York. Sensing a growing dissatisfaction with traditional sectarian religious belief, he moved to New York in 1876 and established the New York Society for Ethical Culture—not as a new religion, but as a movement that stressed morality and ethics as a central theme. It made no reference to a supreme being, whose existence or nonexistence and relation to man were left to the individual to decide.

Adler and his society spearheaded many educational reforms in New York City, including the creation of the city's first free kindergarten, an advanced high school for gifted children, a teacher training school and a vocational school for working men that not only helped them become literate but also helped upgrade their skills by teaching them manual trades.

In 1888, he organized a society for the scientific study of children that later became the Child Study Association (see CHILD STUDY MOVE-

MENT). As chairman of the National Child Labor Committee from 1904 to 1921, he fought for enactment of federal child labor laws. In 1902, Columbia University created a chair for him in social and political ethics, a position he held for the rest of his life.

Adler's movement spread beyond New York to other American cities and Europe. In 1896, The International Union of Ethical Culture Societies was established in Zurich, Switzerland, and three years later, the American chapters federated into the American Ethical Union.

Adler, Mortimer J. (1902–2001) Educator, philosopher, author, editor, whose *Paideia Proposal* in 1982 called for massive reforms of American elementary and secondary school curricula and teaching methods. Adler earned his Ph.D. in 1928 at Columbia University, where he taught for 10 years, before becoming a professor of philosophy at the University of Chicago. There, he joined ROBERT M. HUTCHINS in espousing "PERENNIALISM," an educational theory that all knowledge of any value is contained in existing classical texts of literature, the arts, history, mathematics, philosophy, and science.

Adler and Hutchins converted their theory into a scheme for reforming the college curriculum through a "GREAT BOOKS PROGRAM." The program was based on the 54-volume Great Books of the Western World series, which they compiled and edited, and a two-volume index of great ideas that they created, *The Syntopicon*. After the Great Books project was completed in 1952, Adler became director of the Institute for Philosophical Research and, 10 years later, an editor for Encyclopaedia Britannica, Inc. Adler's three-volume *Paideia Proposal* called for public schools to adopt three teaching methods to achieve three educational goals: lecturing to transmit information; coaching to teach skills; and questioning by the SOCRATIC METHOD to

promote understanding. Adler said all public school children should follow a single, 12-year educational track, regardless of whether they are destined for manual trades or university. It would do away with the GENERAL EDUCATION and vocational education tracks and teach all students, from first through twelfth grades, an academic core curriculum of their own language, a modern foreign language, literature, fine arts, mathematics, natural science, history, geography and social studies. All would also have 12 years of physical education and training in industrial arts.

In the course of his career, Adler wrote or edited several hundred books on education, philosophy and history, along with several multivolume encyclopedias.

administration and organization The management and direction of schools, colleges, universities and other educational institutions and, collectively, those in command of such management and direction. In general, administration at any school consists of these broad functions: community relations; curriculum development and instruction; student supervision; teacher relations; control and direction of the administrative staff; plant management; budgetary and financial management.

In public schools, the chief administrator is usually the superintendent of schools for a district that typically includes one central high school for the entire district, to which students travel by bus, and several, relatively small, neighborhood elementary and middle neighborhood schools, usually within walking distance of student homes. Major cities and some outlying areas with student populations too large to house in a single building may have more than one high school under the direction of a single superintendent and several assistant superintendents. In theory, the superintendent has no policy-making powers and is subject to policies set by a school board, the

composition and size of which is determined by registered voters in the district. The school principal, or chief administrator, of each school in the district, is also subject to school board policies. Directly responsible to the superintendent of schools, each principal may, according to the size of the student population, delegate certain authority, such as discipline, academic affairs or administrative affairs, to assistant principals.

In private schools, boards of trustees replace school boards as the ultimate policy-setting group. Trustees may be elected by parents, alumni, or other trustees or any combination thereof, although clerics appointed by the church often serve in that capacity in church-related schools. The principal or headmaster/headmistress serves as chief administrator in private schools. As in public schools, principals may delegate authority to assistant principals or, in many cases, to deans. Unlike assistant principals, whose authority is limited to an area of activity for all students at school, a dean usually serves as the administrative head of an entire school subdivision, with almost all the authority of a principal. A dean of lower school, for example, is in effect the principal of the elementary school. Similarly, deans of middle schools or upper (high) schools have full authority over each of those school subdivisions.

Administrative leaders at public colleges and universities are appointed by and serve a board of trustees or REGENTS appointed by state education officials. The senior administrators at private institutions are appointed by boards of trustees who, in turn, may be self-perpetuating or elected from and by the alumni/alumnae of the college or university.

Titles (more colorful than those in secondary and primary education) and the range of duties vary from institution to institution. The most common titles are president or chancellor (the latter more commonly used in English universities), vice president or vice chancellor,

provost and dean. Together, they administer business, maintenance, personnel and record-keeping, along with fund raising and alumni affairs. The vast majority of academic officers emerged from the academic ranks during the 19th century and most of the 20th. As academic administration has become more complex, however, many institutions have turned to the world of business and industry and even politics for some of their chief administrators. Unlike college teachers, academic officers usually serve at the pleasure of the college president or board of trustees and are seldom granted tenure.

The president's, or chancellor's, duties are twofold. He or she is the chief administrator of the college or university and the most public visible spokesperson. At small colleges, the president's time will be equally divided between the two functions; at major universities the president's primary task will be to make public appearances to enhance the institution's reputation, to lobby for government funds and grants (in the case of public institutions) and to raise large sums of money from private individuals and foundations. His or her on-campus role is largely limited to important policy decision-making and ceremonial roles, with day-to-day administrative decisions delegated to any of a variety of vice presidents, usually under a single provost or chief administrator. Like all titles of academic rank, *chancellor* is derived from Latin; the *cancellarius*, or "gatekeeper," guarded the bars or grating that separated the public from the clergy in the chancel, in the case of Roman Catholic cathedrals, or from the judges in the chancery in English courts.

The vice president, vice chancellor or provost is usually the president or chancellor's chief administrator. (The term *provost* is derived from the Latin *praepositus*, meaning "to be placed or set before or over," as the head or chief.) Large universities, like large corporations, may have any number of vice presidents,

each with his or her own special area to administer—administrative affairs, academic affairs, finance, development (fund-raising), alumni affairs, public affairs, admissions and financial aid, personnel, and so on. Depending on the university, any or all of these areas may carry lesser titles such as dean or director. Usually nonacademic departments such as athletics are headed by a director rather than a dean.

In addition to administrative officers, colleges and universities also have academic officers or deans, each in charge of one or more specific areas of academic life, depending on the size of the college. A small college may have a single dean of students or, if larger, a dean of academic affairs, dean of “student life,” and so on. At large universities, deans are appointed as administrative and academic heads of each undergraduate and graduate school—for example, Dean of the College (undergraduates), Dean of the Law School or Dean of the Medical School, and each may, in turn, have assistant heads to whom the dean delegates various administrative duties. The term dean comes from the Latin *decurion*, a Roman cavalry officer in charge of a *decuria*, or division of 10 men. Later, the Benedictine monks divided their monasteries into *decuries*, or divisions of tens, with the tenth person, or dean, in charge of each.

administrative theory Any of a wide variety of assumptions designed to predict individual behavior within an organization such as a school. In any school, it is important to be able to predict as accurately as possible how students, teachers and staff members will respond to changes in curriculum, for example, or overall educational goals. Although individuals seldom respond exactly alike, administrative theory can help predict the general response of a school community to a wide variety of administrative and policy changes and the possible effects on student, teacher and staff pro-

ductivity, efficiency and morale. Administrative theory is designed to avoid the damaging confrontations that often follow such seemingly innocuous changes as shorter or longer class periods, curriculum expansion, salary increases, expanded or contracted duties, introduction of hierarchal titles such as “master teacher” and budget cutbacks.

admissions testing programs A battery of manually or computer-administered tests measuring scholastic aptitude and academic achievements of applicants for schools, colleges and university graduate schools, almost all of which use admissions tests to determine the academic level appropriate to each applicant. Admissions testing is also used by academically selective public and private schools, colleges and universities to screen out applicants deemed academically less suited than others to attend such institutions.

At the preschool level, tests may consist of nothing more than manipulating block puzzles—putting differently shaped blocks in the appropriately shaped openings, for example. In later elementary school and high school years, such tests almost always consist of written examinations, either one designed by the individual school or one of the standard ACHIEVEMENT TESTS such as the CALIFORNIA ACHIEVEMENT TEST, the IOWA TESTS OF BASIC SKILLS or the COMPREHENSIVE TESTS OF BASIC SKILLS. Some 500 academically selective private high schools require applicants to take the Secondary School Admission Test (SSAT), sponsored by the Secondary School Admission Test Board and offered at more than 250 test sites across the country.

There are two standardized admissions testing programs for admission to four-year colleges for study leading to bachelor’s degrees: the Scholastic Assessment Tests of the COLLEGE ENTRANCE EXAMINATION BOARD, used by many northeastern colleges; and the ACTs of the

American College Testing Program, used by many western, midwestern and southern colleges. About 1 million students a year take the ACTs, and 1.25 million take the Scholastic Assessment Tests (SAT). Both the SATs and ACTs measure student reasoning and problem-solving abilities, as well as specific knowledge in such basic high school subjects as English, mathematics and science.

University graduate schools require their own specialized admissions tests, such as the Allied Health Professions Admissions Test (AHPAT); Dental Aptitude Test (DAT); GRADUATE MANAGEMENT ADMISSION TEST (GMAT) for entrance to graduate business schools; Graduate Record Examination (GRE) for graduate study in the humanities and education; the LAW SCHOOL ADMISSION TEST (LSAT); the MEDICAL COLLEGE ADMISSION TEST (MCAT); and the Pharmacy College Admissions Test (PCAT).

adolescence A vaguely defined and extremely variable period of human development sometimes called the growing-up years or the transition between childhood and adulthood. Depending on the individual child, adolescence may stretch from the onset of puberty, at 10 to 14 years of age, to maturity at about age 20. The age of pubescent onset has declined steadily. By 2000, some breast development was evident among white girls before age 10 and before age nine in black girls, with the growth of pubic hairs beginning about a year later. But even at age seven, 27% of black girls and nearly 7% of white girls had started growing breasts, pubic hair or both, according to a study of more than 17,000 American girls published in 1999 in the professional journal *Pediatrics*. Characteristics of adolescence vary widely from culture to culture. Of greatest consequence to teachers in American schools, however, is the widespread tendency of American adolescents to test the limits of independence—sometimes with high-risk,

self-destructive or antisocial behavior in and out of school.

Adolescence typically begins with puberty and the development of secondary sexual characteristics. Boys develop facial and pubic hair, experience a deepening of the voice and broadening of the musculature. Girls experience the first menstruation and develop breasts and pubic hair. Both boys and girls develop sexual appetites and become more active sexually, although sexual potency varies widely from individual to individual. Their new appetites and physical capabilities, however, necessarily mean a new and sometimes overpowering distraction that can interfere with schoolwork. Capturing their attention requires exceptional skills, and most successful teachers of adolescents rely heavily on a mixture of one-to-one coaching and cooperative projects that make each student a key member of a peer team to which the student is responsible for the success of his or her task.

In addition to physical changes, adolescence is a period in which children increasingly seek to break ties of childhood dependency to parents and other adults and test their abilities to manage their lives independently. In doing so, they often find themselves in conflict with adult authority figures and tend to turn to each other for emotional support. The conflict with parents can be bitter and confusing for some children, who may find themselves under pressure to “act like a grown-up” at one moment, only to be told in the next to obey unquestioningly, like a child. The degree of their resulting alienation from adults often determines the degree to which adolescents turn to their peers for support. Conformity is a prerequisite for such support—in dress, clothes, personal grooming, speech patterns, musical tastes, and so on.

Often, however, peer conformity may also include high-risk behavior, including premature sex, alcohol abuse, drugs, crime, drop-

ping out of school, and other self-destructive and antisocial behavior. The degree and prevalence of high-risk and other aberrant adolescent behavior fluctuates wildly, depending on a variety of factors, including the stage of brain development of the individual adolescent, peer pressures, the prevalence and popularity of particular behavior among adolescents and efforts of the adult community to control or suppress harmful behavior by adolescents. During the 1980s, for example, pregnancy rates among 10- to 14-year-olds increased about 25%, while rates of gonorrhea quadrupled for that age group and tripled for 15- to 19-year-olds. During the 1990s, however, teenager birth rates plunged 23% and, by 2003, had reached their lowest levels in 40 years—less than 43 births per thousand teenagers, compared to 82 in 1960 and 53 in 1980. Teenage pregnancy rates among black girls fell from about 160 per thousand to about 80, while the rate for white girls dropped from 80 to just over 40. The decline in pregnancy rates, however, did not mean teenagers were abandoning sexual promiscuity. Quite the contrary, although they were obviously adopting precautions to reduce the rates of pregnancy and sexually transmitted disease. Indeed, a December 1999 study by the National Center on Addiction and Substance Abuse at Columbia University found that 38% of 15-year-old girls and 45% of 15-year-old boys had engaged in sexual intercourse, compared to only 5 percent and 20 percent, respectively, 25 years earlier. And another study found that 17 percent of seventh and eighth graders (12- and 13-year-olds, on average) had already engaged in intercourse. By 2003, a U.S. Centers for Disease Control study of youth risk behavior found 34.6% of high school girls and 33.8% of high school boys “sexually active,” with the race, ethnic, gender and age breakdowns as follows:

	Female	Male
White	33.1%	28.5%
Black	44.2%	54.0%
Hispanic	35.8%	38.5%
Grade 9	18.3%	24.0%
Grade 10	31.2%	30.0%
Grade 11	42.9%	39.2%
Grade 12	51.0%	46.5%
Total	34.6%	33.8%

Source: CDC *Youth Risk Behavior—United States 2003*

Rates of other high-risk behavior were equally paradoxical, as violent adolescent crimes fell dramatically while drug and alcohol use climbed. The drop in violent crimes coincided with passage of the federal SAFE SCHOOLS ACT OF 1994, which threatened public schools with loss of federal aid for failure to expel any student found carrying drugs or weapons in schools. From 1995 to 2003, arrests of juveniles 10 to 17 years old for violent crimes (murder, rape, robbery and aggravated assault) fell more than 45%, to 71,000—the lowest level in 20 years. Although drug use dropped during the last decade of the 20th century, the percentage of teenagers who used drugs regularly climbed from 9.7% to 11.6% from 2000 to 2003. Regular, excessive alcohol consumption, which had climbed 30% during the previous 30 years, continued its ascent in the new century, with 17.6% of teenagers describing themselves as regular users in 2002—an increase of more than 7% from 2000. Nearly 11% described themselves as binge drinkers (consuming five successive alcoholic drinks at a seating), compared with 10.4% three years earlier. Binge drinking varies dramatically with age: In the most recent surveys, about 15% of eighth graders, 25% of tenth graders and 30% of twelfth graders admitted to having participated in binge drinking within the previous two weeks. Teen use of marijuana and hashish, meanwhile, jumped from 7.2% to 8.2%, while cocaine use remained steady at 0.6% and the

use of hallucinogens declined from 1.2% to 1%. Cigarette consumption eased from 13.4% to 13% and the use of smokeless tobacco from 2.1% to 2% of all teens. Ironically, 40% of adolescents polled in 2004 claimed that they condemned peers who used drugs, compared with 35% a year earlier and fewer than 20% a decade earlier.

Other sectors of high-risk behavior by teenagers continued to puzzle researchers, however. Although suicide rates declined slightly from their peak a decade earlier, they were the third leading cause of death among teenagers, at a rate of 10.2 per 100,000 in the late 1990s, with the highest rates recorded in Alaska, the Dakotas and the Mountain states, and the rate among white youngsters more than 42% higher than that of black teenagers. Accidents of all kinds remained the leading cause of death, and homicides were the second leading cause, with a spate of mass killings by gun-wielding students adding to the carnage. Two students at Columbine High School in Littleton, Colorado, shot and killed 12 students and a teacher and wounded almost two dozen others before killing themselves on April 20, 1999. A month later, a 15-year-old gunman wounded six students at a high school in Conyers, Georgia. In December, a Fort Gibson, Oklahoma, middle school student opened fire with a semiautomatic handgun and wounded five students, and in March 2001, two students at Santana High School, Santee, California, shot and killed two students and wounded 13 others. The series of killings had at least one positive effect on America's schoolchildren—namely to break the pervasive code of silence against reporting fellow students to school authorities for rule violations. After the Santee killings, tips by students led to arrests in five California schools for planned violent attacks on students or teachers.

Adolescence can be a period of emotional turbulence for many students—and almost as

stressful for the adults who must work with them. For that reason, most school districts in the United States created “MIDDLE” SCHOOLS in the 1960s and 1970s, to segregate adolescents in schools of their own, limited to seventh, eighth and ninth graders, but often including fifth and sixth graders as well.

Regardless of the number of grades, all good middle schools are staffed with teacher-specialists trained to meet the needs of young adolescents—children “in the middle,” whose intellectual, physical and emotional needs differ substantially from preadolescents and from mature high schoolers. Middle school teachers are trained to convert the liabilities of adolescents into assets that promote learning. By relying on group projects, for example, teachers create new peer groups with class- and school-oriented goals that demand academic achievement if each youngster is to conform with his peers and help the group reach its goals.

(See also THERAPEUTIC SCHOOLS.)

Adopt-a-School Program A collaborative effort between local businesses and Chicago public schools to improve public school education and, in turn, improve the quality of the area's workforce. One of several dozen such cooperative education programs in almost every state, Chicago's Adopt-a-School program asks participating companies or industries each to adopt one school for at least one year. Each school provides an educational “wish list,” with all its unfulfilled educational needs for which tax dollars are unavailable. The adoptive company or industry usually tries to work with a school in its immediate area and, in weekly meetings with the principal, teachers and an Adopt-a-School coordinator, work out plans of action.

The degree and nature of a company's involvement varies dramatically from program to program. A utility company, for example, sent 20 employees to tutor reading and math-

ematics for 90 minutes twice a week. A bank set up a Foreign Language Resource Center to tutor 300 students for whom English is a second language and to take them to various cultural centers they would normally not visit. A telephone company set up an attendance squad that called all the homes of absent students of its school each morning to ask parents if their children had legitimate excuses for staying home. It reduced absenteeism from 20% to 13%. And a candy manufacturer set up a remarkable special project for about 100 students needing remedial help. It organized them into small groups charged with the responsibility of designing, developing, producing and marketing a new candy to fellow students. In so doing, students eagerly sought remediation to develop the needed academic and practical skills to reach their goals (see ACTIVE LEARNING).

Many other cities have similar cooperative, VOCATIONAL-EDUCATION programs. Houston has its Volunteers in Public Schools involving more than 100 companies, St. Louis has a School Partnership Program, and Pittsburgh has a Partnership in Education program. Boston's is the most far-reaching, involving almost all the city's public schools.

In general, the programs have five key goals: to provide remediation and hope, in the form of job opportunities, for disadvantaged students; to identify and nurture gifted students; to boost teacher skills and morale through behind-the-scenes support and special training; to provide job opportunities and ease the transition from school to work; to provide administrators and skilled managers to help principals and school administrators improve their performance.

To succeed, however, such programs must be based on three conditions. Teachers' and principals' unions must be willing and eager to work with nonprofessionals. That is often not the case. Fewer than half the schools in many cities have signed up for such programs. A sec-

ond condition for success is the promise of jobs for students—a difficult promise to fulfill for companies that are cutting costs and improving efficiency by reducing work forces. A third key condition is student ambition to succeed—a rare quality in emotionally and socially dysfunctional students from the inner city's poverty, broken homes and pervasive atmosphere of drugs and crime.

Adult Basic Education (ABE) The education of adults who never began or completed the normal kindergarten-through-twelfth-grade schooling experience. Designed primarily to eliminate adult illiteracy, Adult Basic Education can range from elementary school-level reading, writing and arithmetic for illiterates to high school-level American history to help prepare immigrants for citizenship. Most often, ABE is associated with non-English-speaking immigrants in major cities, and it has seldom reached out to American-born, rural illiterates in the Deep South or mountain areas. ABE peaked during the waves of immigration between the Civil War and World War I, although it is once again expanding to meet the needs of increased immigration from Latin America.

adult education A broad range of academic, vocational, professional and avocational courses of study designed for adults no longer attending formal school or college. Offered on site, on line or by mail by a wide variety of institutions, adult education may range from courses for hobbyists or for personal improvement to courses on nuclear physics, political theory or philosophy. In between these extremes are courses that teach arts and crafts, vocational, technical and professional skills and standard high school, college and graduate school courses. Some courses teach personal or family health, others political and social activism and others art or music appreciation.

Unlike ADULT BASIC EDUCATION, adult education assumes literacy and, depending on the particular offering, an elementary or even a high school education. Students can earn academic credit for some adult education courses and even certificates or diplomas, or they can simply take courses for the sake of learning. Usually offered on a part-time basis during nonoffice hours, adult education is available in many public schools, at two-year and four-year colleges, at universities, at proprietary trade schools and in museums, libraries and other public and private institutions. It is also available from associations and organizations, via television and radio, from correspondence schools and through individual instruction.

Some adult education falls under the category of continuing education, which usually consists of advanced courses designed for professional improvement at various times during midcareer. Some professions such as teaching require periodic continuing education to assure tenure or salary increases.

The growth in the number of students enrolled in adult education courses at colleges and universities soared during the last quarter of the 20th century, with the advent of DISTANCE LEARNING via the Internet expanding the number of enrollees logarithmically. By the end of 2005, the number of adults over 25 enrolled in American colleges had tripled to between 45% and 50% of total student enrollment. Of the more than 17 million college and university students in America, more than 20% were 35 or older, 14.5% were between 40 and 50 and nearly 7% were older than 50. About 21% of all students over 35 were enrolled full time, with 30% enrolled in two-year colleges, an equal number in four-year institutions and 40% enrolled in graduate schools. Women accounted for 52% of total enrollment. About 75% of all students were white. About 30% took work-related courses, 21% took personal-interest courses, and only

5% were studying to complete their post-high school degree programs. About 1% were enrolled in apprenticeship programs, and 1% were studying English as a second language. As for specific areas of study, nearly 25% of those enrolled took business and management courses (including computer math), and about 18% took courses in education. Humanities, health, and social and behavioral sciences were next in order of popularity.

Early 21st century adult education enrollment figures, however, did not—indeed, could not—take into account the increasing number of adults enrolling in the exploding distance learning industry via the Internet. Hundreds of educational institutions—public and private universities and colleges, along with for-profit PROPRIETARY SCHOOLS—tapped into the exploding \$200-billion-a-year higher education market by delivering undergraduate- and graduate-level courses electronically to students of all ages around the world. The University of Phoenix, in Arizona, for example, saw its enrollment explode from about 2,500 students in 1973 to more than 200,000 by 2005, while the burgeoning number of for-profit colleges as a group claimed more than 1.5 million students, of whom 44% were over 25 and nearly 17% over 35. By 2000, more than 2,000 institutions of higher education across the United States, along with at least 1,200 private corporations, also offered an ever-expanding number of course offerings via the Internet.

(See also CORRESPONDENCE COURSE; CORRESPONDENCE SCHOOL; FOR-PROFIT COLLEGES.)

Advanced Placement (AP) Program A national program of freshman-level college courses for high school students who have successfully completed the standard high school curriculum in a particular subject before the beginning of their senior year.

Started in 1955 by the COLLEGE ENTRANCE EXAMINATION BOARD, Advanced Placement courses

are designed and graded by each high school, but the design adheres closely to guidelines set by CEEB and is followed by CEEB national AP examinations in each subject. AP exams are scored on a scale of 1 to 5, and a high score in a subject may earn a student advanced standing in that subject at some colleges. Many American colleges offer college credits for a passing grade on the AP test and some permit matriculation as a sophomore for six such credits. By entering as a sophomore, a college student can thus cut the time and money spent on college by 25%.

Offered only in high schools, AP courses are available in about three dozen subjects, including literature, English composition, mathematics, European history, American history, Latin, Spanish, French, German, biology, chemistry and physics. Nearly 15,000 of American high schools, or 60%, offer one or more AP courses, and more than 1 million high school students, or 6% of the high school population, take one or more of such courses each year; the number expands annually because of the belief that such studies not only enhance the chances of admission to prestigious colleges but also improve student academic performance at college. Ironically, neither seems to be the case. Indeed, a University of California study of more than 80,000 freshmen and sophomores at eight campuses over three years found no significant differences in academic performance between students who had taken AP courses in high school and those who had not. One result of that and other, similar studies has been a gradual abandonment of AP programs at academically demanding private secondary schools, where AP studies had forced costly and apparently unnecessary faculty expansion. One prestigious New York private school found no differences between its AP and non-AP seniors in terms of rates of admissions to academically demanding colleges or subsequent academic performance at college.

Academically demanding colleges have also soured a bit on AP programs. For many colleges, a passing score of three is sufficient to earn college credit in the particular subject, but Dartmouth, Duke, Northwestern, Stanford and similar colleges require fours or fives, depending on the subject. About 13% of AP test takers earn fives, 20% earn fours, and 27% earn threes, the lowest passing grade. Harvard refuses to award college credits for AP exam scores lower than five. Technically oriented schools such as California Institute of Technology and Massachusetts Institute of Technology refuse to give any credit for AP studies in many areas, regardless of exam scores.

Still another criticism of the Advanced Placement program is its tendency to give an advantage to the most privileged high school students in the college admissions process. Although well over one million students take AP courses each year, 40 percent of American high schools—largely in poor urban or rural areas—do not offer such courses.

advanced standing Placement of a student at a higher than conventional academic level at college. Advanced standing often permits completion of college work in less than the usual four years. Freshmen at many colleges, for example, may gain advanced standing in various courses if they obtain high enough scores on the appropriate ADVANCED PLACEMENT EXAMINATIONS or COLLEGE LEVEL EXAMINATION PROGRAM. Some colleges also grant advanced standing to students on the basis of credits earned at other institutions of higher learning or upon passing specific advanced placement exams administered by the college. A few colleges grant advanced standing on the basis of life and career achievements.

advance organizers A graphic presentation of new ideas and concepts to give students a preliminary, superficial understanding of the

material they are about to study and its relationship to what they have already learned.

Advance organizers may range from outlines of the work a course will cover over the entire semester to a presentation of the elements of a concept or body of materials that students are about to study—for example, plane geometry axioms and postulates or the breakdown of biological classifications into species, genera, families, phyla, and so on. The skill with which teachers prepare advance organizers can often determine the ease with which students absorb new materials.

aesthetics The study of beauty as expressed through the sensuous as opposed to practical arts. Aesthetic education concentrates on creation and appreciation of music, dance, fine arts, literature and the dramatic arts, the development of good taste and judgment and appreciation of cultural differences in the arts. Now taught at all levels of the curriculum, aesthetics formed the basis of academy education for women in 19th-century America, while men studied philosophy, religion, the natural sciences, classical and modern languages, history and political science, in other words, the practical arts.

affective domain One of three “domains” of learning that make up psychologist-educator BENJAMIN BLOOM’S taxonomy, or classification of the learning process and educational objectives. Bloom divided the learning process into the affective, cognitive and psychomotor domains, with each then subdivided into categories and subcategories representing different steps and levels of learning to which educational objectives are tied. The affective domain is made up of behavior and learning that stem from emotions and feelings, as opposed to physical and intellectual abilities. The affective domain of learning is divided into five “hierarchical categories” or learning stages: receiving,

responding, valuing, organizing and characterizing.

According to Bloom, learning in the affective or emotional domain begins as the student is first aware of a phenomenon or stimulus (receiving) and either ignores it or decides it is worth responding to (valuing) and then gives it a value or priority (organization) among many other stimuli being received. Depending on the priority assigned, the student may then organize it as part of a larger system of values (characterization) that will influence future behavior and learning.

affirmative action The disproportionate hiring and/or advancement of minority workers and enrollment of minority students (African Americans, Asians, Hispanics, Native Americans and women, among others) to compensate for discriminatory exclusion of those minorities prior to passage of the CIVIL RIGHTS ACT OF 1964. There are three forms of affirmative action: set-asides, factoring and standards readjustment. Set-asides reserve a specific percentage of opportunities—jobs or college acceptances, for example—for specific races, ethnic or religious groups or genders. Factoring merely takes gender, race or ethnicity into favorable account in admissions or hiring decisions. Under standards readjustment programs, colleges and schools intentionally lower academic standards and introduce remedial programs to permit disadvantaged students to achieve higher grade point averages. More than 90% of the nation’s public colleges, for example, offered remedial courses more appropriate for elementary or middle school children.

One goal of affirmative action is to bring minority participation in American life to levels at least proportionate to their numbers in the population and to assure equal hiring and promotion opportunities in the future. The Civil Rights Act also established an Equal Employment Opportunity Commission (EEOC)

to police the law by inspecting employment records, setting employment goals and timetables for fulfilling those goals, establishing training programs to upgrade minority worker skills to assure worker employability. The EEOC has the power to review complaints by workers or students who believe they have been denied access to a job or a seat in a school or college because of their minority status.

After slightly more than a decade of nationwide affirmative-action programs, set-asides for minority students and race-based admissions and scholarship grants, many colleges came under increasing attack for reverse discrimination against more qualified white applicants. In *UNIVERSITY OF CALIFORNIA REGENTS V. BAKKE*, in 1978, the Supreme Court, which had previously ruled that affirmative action was constitutional, reversed itself and ruled that the University of California, which had set aside a specific number of seats at its medical school for black students, had violated the rights of a better qualified white applicant when it denied him entry and filled its last available seats with less qualified minority students. Later, one federal court ruled that race-based scholarships open only to black applicants at the University of Maryland, a public university, were not discriminatory against whites and Hispanics, because they were intended to rectify past discrimination. A second court, however, reversed the ruling in 1991 on the grounds that discrimination had ended 30 years earlier and that the university had not proved the continuing effects of past racism and the need for affirmative action. Five years later, in 1996, a federal appeals court declared the affirmative-action program for admissions at the University of Texas Law School unconstitutional because it violated the rights of white students. Although privately sponsored race-based scholarships remain perfectly legal, the decisions affecting public universities, along with opposite affirmative action policies by successive Republican and Democratic administra-

tions, have left the legalities of affirmative action vague and imprecise.

Ironically, after 30 years of aggressive affirmative-action programs across the United States, the percentage—and actual numbers—of black teachers in public elementary and secondary schools had declined. By 1996, only 7.3% of public school teachers were black, compared with 8.1% in 1971. Fewer than 1% of black teachers in elementary schools were men and only about 2% of black high school teachers were men. In contrast, black students made up 16.9% of the total student population of about 45.6 million. In higher education, affirmative-action programs produced somewhat more gains for blacks at both the faculty and student level. Nearly 4.9% of college and university faculties were black, compared with about 2% a decade earlier, while the percentage of black students enrolled in colleges and universities climbed from 9.3% to nearly 10.5% of the student population.

Aside from preferential admissions policies, affirmative action in higher education has also meant preferential aid grants averaging \$1,500 more financial aid per student per academic year for black students than for white students with the same financial needs. A study by the Consortium on Financing Higher Education (COFE) found that 17% of the fees paid by students who pay the full costs of attending college represents a contribution to scholarship grants for needy students—with no concomitant tax deduction normally available for comparable charitable deductions.

Resentment against affirmative-action programs reached a climax in 1995, when the University of California Board of Regents voted to stop admitting students, hiring professors or awarding contracts on the basis of race and sex. The board was responding to public perceptions that affirmative action did indeed represent a form of reverse discrimination against qualified white males. California governor Pete Wilson,

who had demanded an end to quotas of all sorts, declared that affirmative action was “trampling individual rights to create and give preference to group rights. Race has played a central role in admissions practices . . . [and] some students who don’t meet minimum requirements are admitted solely on the basis of race.”

Although *Bakke* and a number of subsequent lower-court rulings banned the use of race as a consideration in college admissions, the U.S. Supreme Court effectively restored its use to a limited degree in 2003. In two cases involving the University of Michigan, the Court upheld the use of race as a consideration for admission to Michigan’s law school (*GRUTTER V. BOLLINGER*), but in the second case (*GRATZ V. BOLLINGER*) involving undergraduate admissions, the Court banned the use of so-called point systems that arbitrarily award different values to different factors—SAT scores, high school grades, extracurricular activities, gender, and so forth—and give undue weight to factors such as race and membership in other nonwhite minority groups. Michigan used a 150-point scale in evaluating admissions applications, with 100 points needed to win admission. The admissions office awarded a 20-point “race bonus” to black, Hispanic and American Indian applicants—the same amount awarded for a 4.0, or perfect, high school grade point average. Although the Court upheld the principle of affirmative action and allowed race to remain one consideration, it banned colleges from giving it more weight in admissions considerations than any other “personal characteristics,” such as being an Eagle Scout, president of the class or captain of the football team.

The university attempted to compensate for the effects of the Court decisions with an aggressive minority outreach program for needy students, with individual grants ranging from \$300 to \$1,500 a year. In November 2006, however, Michigan voters forced the university to abandon its outreach program and all other affirmative action by 58% to 42% in a statewide

referendum to amend the state constitution with an outright ban on affirmative action in public-college admissions and government hiring. The vote followed similar referenda in California and Washington, and Illinois, Missouri and Oregon have planned similar actions.

Over the years, decisions of the federal courts have left admissions officers at most selective colleges utterly confused. The bans on affirmative action in the 1990s produced dramatic declines in minority applications and enrollments, the former falling 13% at the University of Texas school of undergraduate studies, 23% at the medical school and 42% at the law school.

Court decisions affecting affirmative action at the public school elementary and secondary levels have been equally confusing. Aimed, in theory, at achieving racial balance in large urban school districts, affirmative action plans vary widely from state to state. Jefferson County, Ky., which includes Louisville, requires schools in districts that are one-third nonwhite to maintain black enrollment of at least 15%, though no more than 50%. Seattle, Wash., requires its schools to maintain black enrollment of 45% to 75%. The U.S. Supreme Court has generally allowed local courts and other local authorities to decide whether to continue, alter or end affirmative action in specific communities, but in 2006, the high court agreed to rule again on whether the use of race in determining school enrollment is not itself a form of official discrimination.

Before ending affirmative action in 1995, the University of California had admitted between 40% and 60% of all freshmen on the basis of academic merit alone, with the remaining freshmen admitted on the basis of many other factors, including athletic abilities, extracurricular activities, socioeconomic status, as well as race and gender. After ending affirmative action, the university admitted between 50% and 75% of all freshmen on the basis of academic merit, with the remainder admitted

on other factors, including socioeconomic factors, but not race, ethnicity or gender.

To prevent any return to affirmative action, the people of California in 1996 overwhelmingly approved a referendum banning racial and gender-based preferences in government hiring and contracting and in admissions to public colleges and educational institutions. After a federal court upheld the constitutionality of the ban the following year, other states, including Maine, Mississippi, Texas and Washington followed California's example by imposing legislative or court-ordered bans on affirmative-action programs in college admissions and financial aid. After years of court-ordered desegregation, Boston ended affirmative action in its admission policies at the BOSTON LATIN SCHOOL, a prestigious public high school and one of the nation's leading "MAGNET SCHOOLS" for gifted students. Reversing all previous court decisions, a federal appeals court ordered an end to affirmative action at Boston Latin, calling it a form of reverse discrimination, and it extended the new ban on affirmative action to all areas under its jurisdiction—namely, Maine, Massachusetts, New Hampshire, Rhode Island and Puerto Rico. Although outside the court's jurisdiction in the case, Virginia schools embraced the Massachusetts decision and immediately acted to end affirmative action. Boston Latin had admitted half its students solely on academic qualifications and used a race- and gender-based formula for admitting the other half, to assure compliance with a previous desegregation order that minorities make up 35% of each class. Although Boston Latin limited minority admissions to students who ranked in the top half of their classes at their previous schools, it was forced to reject hundreds of white applicants who were more qualified academically than the minority students it admitted, and one of the rejected applicants sued—and won.

Unlike Boston Latin, New York City magnet schools had never adopted affirmative action,

and the percentage of blacks and Hispanics combined never reached 10%, although they made up more than 50% of the city's population. But at the CITY UNIVERSITY OF NEW YORK, which instituted an affirmative-action program of open enrollment in 1970, blacks made up more than 30% of the student body and Hispanics more than 20% by 1995. Open enrollment guaranteed admission to all applicants, regardless of high school grade point averages or other academic qualifications. More than 10% of the students were enrolled in remedial programs in reading, writing and mathematics. By 1999, however, the academic standards of the university had dropped to such abysmal levels that public outrage forced the university to abandon affirmative action. Beginning in 2001, the university joined a growing number of academically elite four-year colleges that admitted students based only on academic merit—that is, high school grade point averages and standardized test scores. It also abandoned all remedial instruction and denied entry to any students requiring remedial work—even if their high school grade point averages or standardized test scores would otherwise qualify them for admission.

In a sense, the Supreme Court's 2003 University of Michigan decisions endorsed the "common sense" approach, but as in every situation where some discretion has been left to mere mortals, the results for minorities seeking to enroll at the most selective colleges and universities have been decidedly mixed. In the year following the Michigan decisions, a survey of 29 institutions with competitive admissions found 11 with increased black and Hispanic enrollments and seven with decreased minority enrollments. At the remaining 11 institutions, enrollments of at least one or the other minority group fell.

The end of most legally sanctioned race-weighted affirmative action, however, did not mean an end to widespread public concern about the failure of American education to

provide deprived minorities with adequate academic skills to compete in the economic mainstream of American life. To open the doors of higher education to deprived minorities, a growing number of states adopted limited open-enrollment policies for high-achieving high school students. Limited open enrollment was seen as a “commonsense compromise” between affirmative action, which often discriminated against qualified, high achieving whites and Asian Americans, and a purely merit-based program, which denied intelligent but culturally deprived minorities who scored poorly on standardized admissions tests of the chance to advance economically via higher education. California, for example, guaranteed all students who graduated in the top 4% of their high school class admission to a branch of the state university. Texas admitted the top 10%; Florida, the top 20%. Limited open enrollment was not without its own drawbacks, however, because automatic admission of all students finishing in the top percentages of every high school class permitted many poorly educated students from educationally inadequate inner-city schools to advance to college without proper academic qualifications, and many, if not most, such students subsequently dropped out without obtaining college degrees.

African-American education The schooling of American blacks, both within and without the mainstream educational establishment. Historically, the quality of education received by African Americans has been far below that offered whites. Only the education of HISPANIC AMERICANS in the United States has produced worse results than that of African Americans.

Little is known about the early history of African-American education in America. Whatever education they received in the 17th century was probably the result of occasional instruction by a benevolent slave master. The nearest resemblance to formal education did

not begin until the first decades of the 18th century, when a handful of public-spirited churchmen and pioneer educators such as ANTHONY BENEZET established small schools for black freedmen in such cities as New York, Philadelphia and even Charleston, South Carolina. By the Civil War, there were also three colleges for blacks, Wilberforce College (later, University) in Ohio, Berea College in Kentucky and Ashmun Institute (later, Lincoln University). All three had been founded in the mid-1850s, to train freed slaves as missionaries, some to migrate to Liberia under the auspices of the American Colonization Society.

Although “common,” or public, elementary schools for white boys had sprung up in



Separate-but-equal schools such as this one for African-American children in rural Tennessee subjected them to unconstitutional educational deprivation, according to the United States Supreme Court in its landmark decision in *Brown v. Board of Education of Topeka*. (Library of Congress)

hundreds of northern towns and cities after American independence, almost none were open to blacks. In the South, so-called black codes made teaching literacy to blacks a felony punishable by heavy fines and imprisonment. Nevertheless, black literacy climbed to 5% by 1860, according to the historian W. E. B. DuBois. Some gains were the work of sympathetic white churchmen. Others came in private classes run by black freedmen. In the South, semiliterate black preachers who held services in the slave quarters of southern plantations spread literacy by holding clandestine classes for black children to help them read the Bible.

After the Civil War, Northern generals who controlled civil government in the South attempted to establish Northern-style public school systems in the former Confederate states. For the first time, Southern communities that could afford to do so built common schools, open to all children, black and white. At the same time, white missionary societies, backed by wealthy northern industrialists, sent thousands of white teachers to found schools and speed the education of former slaves.

The result was a dramatic increase in the number of schools and colleges for blacks. By 1895, there were 62 secondary schools and 27 colleges, in addition to the 3 that had been founded before the Civil War. In addition, independent sponsors founded Atlanta, Howard and Leland Universities, and 13 other schools were founded under the provisions of the LAND-GRANT COLLEGES.

Together, these institutions began turning out the first generation of African-American leaders who would guide their race into the 20th century. By 1900, more than half the graduates of the black colleges had become teachers, while nearly 20% had become clergymen, most of whom were either directly or indirectly involved with education.

To most blacks, literacy became a symbol of liberation, and, with the Emancipation Proc-

lamation, the eagerness of southern blacks to get an education grew into what pioneer black educator BOOKER T. WASHINGTON called a "fever." The fever affected not only children but men and women in their seventies, whom Washington recalled seeing "tramping along the country roads with a spelling book or a Bible in their hands."

"The places for holding school," he wrote in his autobiography *Up From Slavery* (1901), "were anywhere and everywhere; the freedmen could not wait for schoolhouses to be built or for teachers to be provided. They got up before day and studied in their cabins . . . late at night, drooping over their books, trying to master the secrets they contained. More than once, I have seen a fire in the woods at night with a dozen or more people of both sexes and of all ages sitting about with book in hands studying their lessons. Sometimes they would fasten their primers between the ploughshares, so that they could read as they ploughed."

In addition to literacy, many educators also tried to teach former slaves various skills and trades that would give them economic independence. Backed by northern philanthropists, General Samuel C. Armstrong founded the pioneering Hampton Institute in Virginia. Booker T. Washington later founded a similar, trade-oriented school, the TUSKEGEE INSTITUTE, in Tuskegee, Alabama.

Washington believed that the minority status of blacks would prevent them from ever winning political or social equality. He proposed that blacks buy farmland and learn trades with which they could offer goods and services indispensable to the white community. He believed such products and skills would give blacks economic independence and establish mutually beneficial economic ties to whites without necessitating any social or political ties.

Ironically, Washington's success at Tuskegee became the center of one of the most important controversies ever to affect African-American

education. Northern black intellectuals such as DuBois believed academic education would serve blacks better than vocational education. DuBois believed vocational education would leave blacks in permanent servitude to whites. Only academic education, he said, would lead to complete social, civil and political equality. The Washington-DuBois debate produced a bitter split among black educators, and, before the issue was resolved, profound legal and demographic changes destroyed both men's dreams for universal education of black Americans.

When Southern states regained home rule in the 1870s, they segregated the races and slashed budgets earmarked for black schools. Black churches tried to pick up the slack by operating day schools as well as Sunday schools. Trade schools such as Washington's at Tuskegee staged vast expansions. Washington envisioned such schools not just as educational institutions that would give blacks economic independence, but as instruments in an eventual "accommodation" between blacks and whites.

In 1896, however, the U.S. Supreme Court ruled in *PLESSY V. FERGUSON* that states had the constitutional right to segregate the races in "separate but equal" school systems. For the next 60 years, the SEPARATE-BUT-EQUAL DOCTRINE kept blacks segregated from whites in almost all areas of American life and condemned African-American children to substandard education in the North as well as the South. While the latter subjected black children to DE JURE SEGREGATION, the North subjected them to DE FACTO SEGREGATION in equally inferior schools. In the 1946-47 school year, 17 states (Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, Missouri, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia and West Virginia), as well as the District of Columbia, had laws that segregated blacks and whites in separate schools. Only 12 states had laws that banned such segregation.

In 1954, the National Association for the Advancement of Colored People (NAACP), which DuBois and other black intellectuals had founded in 1909 to fight for equal rights for blacks, won a dramatic victory. In the landmark case *BROWN V. BOARD OF EDUCATION OF TOPEKA, KANSAS*, the Supreme Court reversed *Plessy v. Ferguson* and ruled that separate schools, simply by their separateness, cannot be equal, and that segregation is unconstitutional.

Unfortunately, the decision came too late to produce the educational results DuBois had envisioned when he began his debate with Booker T. Washington a half-century earlier. By 1954, nearly three generations of African Americans had grown up in segregated, academically inferior schools set amidst the poverty and crime of America's black slums. The trade schools that Washington had envisioned had prepared many students for jobs that automation had rendered obsolete, and the academic schools envisioned by DuBois had failed to prepare students well enough to gain admission to college.

Although the legacy of segregation continues to affect the education of African Americans, 30 years of AFFIRMATIVE ACTION beginning in the late 1960s diminished those effects substantially and brought African Americans closer to statistical parity with whites. By 2002, about 89% of all African-American students were graduating from high school—below the 92.7% rate for white students, but significantly higher than the 59.6% black graduation rate two decades earlier.

The narrowing of disparities between white and African-American graduation rates, however, was not matched by comparable improvements in educational proficiency—despite dramatic gains in income and educational levels of black families and occupational status of black parents. Although the so-called achievement gap between white and black academic proficiency narrowed by a dramatic 20% from

1972 to 1992, it suddenly ceased narrowing. By 2005, black scores in reading, writing and math proficiency were almost unchanged from 1992.

Although black scores on SCHOLASTIC ASSESSMENT TESTS for admission to college improved slightly (less than 1% on the verbal and 1.8% on math), the 430 average black score on the verbal test and 427 on the math remained 18.6% and 17.7%, respectively, below the scores of white students.

In higher education, African-American gains have been mixed. Although African Americans made up 17.2% of the public school population, they constituted only 11.6% of total college enrollments in 2004—only about two percentage points higher than two decades earlier. The percentage of African-American high school students enrolling in college, however, improved substantially during the last quarter of the 20th century, from about 42% to 62% in 1998, before dropping to 54.6% in 2001. (White enrollment rates climbed from about 50% to a peak of 68.5% in 1998, before slipping to 64.2% in 2001). About 41.9% of African-American high school graduates obtained bachelor's degrees, compared with 54.5% of whites. African Americans make up about 12% of the college undergraduate population and earned 12.3% of the bachelor's degrees awarded in 2004, 4.1% of the master's degrees, 0.5% of doctoral degrees, and 0.8% of professional degrees. They made up more than 5.2% of faculties in institutions of higher learning and just under 7.6% of teachers in American elementary and secondary schools.

Court-ordered desegregation has nevertheless improved African-American education considerably. More African Americans are getting a better education than ever before in their history, as evinced in the steady improvement in Scholastic Assessment Test scores of African-American high school students. De facto segregation of schools, however, remains a problem that continues to deprive many African Ameri-

cans of equal educational opportunities—largely because of inadequate funding and the refusal of many gifted teachers to risk commuting in and out of neighborhoods in which many black schools are located. About two-thirds of all black students still attend public primary and secondary schools in which 50% to 100% of the student body is nonwhite.

Most states continue to fund public schools with property taxes levied according to market values of real estate—a system that automatically produces more funds for schools in wealthy areas than for those in poor ones. In some states, spending on each student in the wealthiest districts averages twice as much as per-student spending in the poorest districts.

Although some state courts have ruled such distribution of school funds unconstitutional, legislatures in many states continue to pass laws to legalize inequitable funding. At least one state, Michigan, abolished all property taxes to force state government to develop new, more equitable methods of funding schools.

(See also BLACK COLLEGES.)

African Americans Americans of African Negroid descent, comprising 12.1% of the American population in 2000. Displaced by Hispanics as the largest American minority, the African-American population grew 21.5% from 1990 to 2000 to about 34.7 million, compared to a growth rate of more than 62% for Hispanics, whose total reached 35.3 million. About 1.76 million Americans in 2000 described themselves as “mixed-race,” with some African-American bloodlines—a category never before measured by the U.S. Census. Of those who reported themselves as exclusively black in 2000, a disproportionately high percentage suffer social deprivation—23.6%, compared with 9.8% of whites, 10.7% of Asians and 22.8% of Hispanics. Nearly 37% of African-American children were living in poverty in 2000, compared to 10.6% of white children,

18% of Asian and Pacific Islanders, 34.4% of Hispanic children and a national average of 18.9%. Poverty in 1999 was defined as a household income of \$17,029 or less for a family of four. Some 53% of African-American children lived in one-parent households, of which 50.6% were below the poverty level; only 26% of all white children lived in one-parent households, of which only 29.8% were below the poverty line. Black unemployment has persistently stayed at about twice that of white unemployment over many years. Although a booming economy in the late 1990s reduced black unemployment from double-digit levels to 7.5% by mid-1999, it remained twice as high as the 3.8% unemployment figure for whites.

In education, African Americans fare no better (see AFRICAN-AMERICAN EDUCATION). They have a high school drop-out rate of more than 30% and a college drop-out rate of 70%. Many educators and sociologists tie these statistics to the black heritage of 200 years of slavery in America. The first blacks apparently arrived in America in 1619 as indentured servants. In 1650, however, the colonists legalized chattel slavery, and it remained legal in the South until Abraham Lincoln signed the Emancipation Proclamation in 1863. The North had gradually started freeing its slaves, state by state, shortly after the signing of the American Constitution. Massachusetts, for example, freed slaves in that state in 1780.

Few freedmen, however, were educated or skilled enough to be self-sufficient after emancipation—either in the North, after the Revolutionary War, or in the South after Lincoln's proclamation. During the century before American independence, missionaries had spread across the colonies to convert to Christianity those whom they called heathen savages—notably, American Indians and African slaves. There were few objections to their work with Indians, but slaveowners feared that conversion to Christianity, and its doctrine of the

equality of man, would lead to MANUMISSION, or emancipation from slavery. Unwilling to risk the enmity of wealthy and powerful slaveowners who underwrote their work, missionaries limited the range of their instruction of slaves. They imparted only enough biblical information for "salvation," which, they said, required unquestioned acceptance of one's lot in life as God's will. According to missionary interpretation of the Bible, blacks were the descendants of Ham, sent to America by God as slaves because of their racial inferiority. In the North as well as South, the church and whites generally reminded blacks that slavery was a sacred obligation. As blacks clung ever more tightly to Christianity and its promise of salvation, many necessarily clung to and taught their children and grandchildren the belief of their earthly destiny as slaves and, indeed, as inferiors to whites.

American independence helped only a handful of blacks. In 1830, there were two million slaves in the United States and 319,599 recorded free blacks. Thirty years later, in 1860, the number of free blacks—almost all of them living in northern cities—had climbed to only 488,070, and rigid segregation in education, employment and social services gave them few economic opportunities.

Even the Quakers, who abhorred slavery, maintained segregated meeting halls. While asserting in one breath their belief in the equality of all persons before God, they repeated, in their next breath, their firm belief in the savage origins and racial inferiority of blacks and the biblical stigmata they bear. The Reconstruction Acts of 1867 divided the South into five military districts, each under the control of a general, each assigned to impose northern-style democracy in the former Confederate states. Although blacks won legal equality with whites—many voted for the first time and some even won election to state and local offices—their victory was short-lived.

By the end of the 1870s, southern states had returned to home rule, and immediately enacted strict racial segregation laws that effectively disenfranchised most black people. Restricted to living in the poorest sections of most communities, blacks were forced to attend separate schools, eat in separate restaurants, travel in separate sections of buses and trains, use separate parks and public recreation facilities and even use separate public toilets and drinking fountains. They could not share public facilities with white friends, although they were always permitted to hold menial positions in white businesses and homes of the 1880s.

For most blacks, segregation also meant intolerable poverty that only grew worse with the collapse of the U.S. economy in the early 1890s, when nearly 10,000 businesses and banks failed. Railroads went bankrupt and ceased operations. Without trains, commerce came to a halt. Even the federal government exhausted its funds and had to borrow \$65 million from private bankers in New York to keep operating. Making matters worse, a drought swept across southern and midwestern farmlands. The winds that followed blew away the top soil together with 75% of American crops. Millions were forced out of work and marched on Washington to demand government help.

Faced with hunger on barren farms, tens of thousands of poor African Americans fled the South to find work in northern cities. Their numbers increased in 1896, after the Supreme Court upheld the constitutional right of states to segregate the races.

That case, *PLESSY V. FERGUSON*, marked the beginning of what would later be called the "Great Migration" that transferred half the black population of the United States from the rural South to the urban North and Midwest.

At the end of the Civil War, more than 92% of American blacks lived in the South—

almost always in rural areas. A century later, half the black population lived in the urban North. In the decade following *Plessy*, black migration northward doubled. In the 1920s it doubled again and once again in the 1930s, during the Great Depression.

The North, however, offered little respite from the crushing segregation of the South. By the end of the 1930s, most blacks found themselves as segregated in the North as they had been in the South—and with far fewer opportunities. Away from lands they could farm, most were crowded into "darktown" ghettos, competing for the lowest paying unskilled jobs. As the Great Depression of the 1930s sent unemployment rates soaring, welfare laws reserved public assistance to families headed by single mothers and encouraged husbands to abandon their families and single men to father children without marrying. The result was and remains a huge slum population of impoverished black families headed by single mothers. Without family structures to sustain them, many ghetto children "ended up illiterate, alienated, and unable to function productively except in the 'hidden economy' of hustling, drugs, and outright criminal activity, or in another generation of female-headed impoverished families supported by public welfare funds," according to education historian Lawrence A. Cremin.

Recent statistics confirm that more than half of all African-American families with children in the United States are headed by only one parent—usually female, usually poor and unskilled, and usually receiving public assistance.

African-American studies A curriculum of literature, history, geography, languages, music, fine arts and other courses emphasizing the contributions of black Africans to the world and, especially, to the United States. The curriculum is often called Afro-American or BLACK STUDIES.

Although the origins of the curriculum in the United States date back to the beginning of the 20th century, it did not generate widespread interest in primary and secondary schools or in colleges until the 1960s, following the struggle to desegregate American schools. A by-product of that struggle was a recognition by scholars, as well as most African Americans, that conventional liberal arts curricula at all levels either ignored or minimized the contributions of Africans and African Americans (and indeed most minorities) to world and American history and culture. African-American studies are designed not only to examine those contributions, but also to expose the extent and effects of the cruelties and deprivations that white Europeans and Americans inflicted on Africans and African Americans over the centuries.

Two nonacademic purposes of some African-American studies programs—especially those at primary and secondary schools—are to promote understanding and reduce prejudice between the races and to improve the self-image of African-American children by focusing on the achievements of their forebears.

African-American educator W. E. B. DuBois provided the first elements of the African-American studies curriculum in 1898, with the publication of his landmark study, *The Philadelphia Negro*. It was recognized as the first study ever to offer historical and environmental, rather than genetic and religious, explanations for the destitute conditions of African Americans. His work set new standards for future sociological studies of racial differences and led to an invitation for him to chair the sociology department at Atlanta University, where he developed a curriculum that became the first African-American studies program in the United States.

In 1915, historian CARTER G. WOODSON founded the Association for the Study of Negro Life and History and a year later, the *Journal of Negro History*. Woodson's goal was to encourage schools and colleges, whether segregated or not,

to offer unbiased courses on black history and make "the world see the Negro as a participant rather than as a lay figure in history." Woodson's journal continually pointed out the distortions of black history in standard history textbooks used in American schools and colleges.

Although black colleges were quick to adopt the African-American studies curricula developed by DuBois and Woodson, white institutions did not begin to follow suit until the late 1960s, when racial segregation had become illegal and black students began appearing in formerly all-white schools and colleges. In 1968, black students at San Francisco State College staged mass demonstrations demanding a black studies program and the appointment of a black teacher, with the rank of full professor, to head the program. The college agreed, and by 1970, 350 other American colleges and universities had followed suit. Programs varied from single courses to entire departments with courses in black history, black culture in the United States, black literature, black art, music and dance, imperialism and race, and many others. In December 1968, Yale University became the first American college to introduce an undergraduate major leading to a B.A. degree in Afro-American studies.

African-American studies, however, has not been free of criticism, both in and out of the academic community. Some scholars claim that just as many white authors and historians distorted history by ignoring, minimizing and even denigrating the role of blacks, some black scholars have exaggerated the role of blacks and, in some cases, invented roles they never played. Moreover, black scholars either ignore or diminish the role of Arabs, Muslims and black Africans in originating and perpetuating African slavery. Still another criticism by both academicians and nonacademicians is that some colleges have corrupted black studies curricula by hiring black activists instead of scholars and inflaming student prejudices against whites.

AFS International Programs See AMERICAN FIELD SERVICE.

after-school programs A wide range of public and privately operated academic and nonacademic enterprises to keep children constructively occupied between the official end of the school day and the time their parents are prepared to care for them at home.

After-school programs increased dramatically from the 1970s to the end of the century, as the percentage of full-time female employment grew from 37% of all women to more than 57% and the number of families with two working parents reached 51%. By 2000, well over half the mothers in the United States with school-aged children were full-time workers—many of them the sole support of their families. Single-parent families represented nearly 19% of white households, 33% of Hispanic households and 54% of black households in 2000—about twice the percentages three decades earlier.

Not to be confused with preschool, after-school programs may occasionally care for preschool-age children, but are primarily designed for older, school-aged children. Operated by public and private schools, government and church agencies, companies, community organizations and private organizations, after-school programs range from pure recreation to pure academics. Some programs consist of free play, sports or games. Others offer entertaining or informative field trips. Many schools offer extracurricular activities or programs that extend classes on a voluntary basis at the end of the official school day.

Agassiz, Elizabeth Cabot Cary (1822–1901) A founder of the Harvard Annex in 1879 and of its successor institution, the Society for the Collegiate Institution of Women, which was renamed Radcliffe College in 1894. Born to a wealthy patrician Boston family at the center of the city's rich intellectual and cul-

tural life, Agassiz obtained a broad, classical education from private tutors. Through her sister, the wife of a HARVARD COLLEGE professor of Greek, she met Louis Agassiz, the world-renowned Swiss naturalist whose arrival to lecture at Harvard in 1846 was described as “the event of the year.”

After his arrival, his wife died in Europe, and in 1850 Elizabeth Cabot Cary married Agassiz. A constant companion of her husband, she used her skills in mathematics and budget management to sort out his tangled finances, and she kept superlative, well-written diaries of her husband's pioneering naturalist expeditions between 1865 and 1872. She also helped her husband plan and manage the Anderson School of Natural History at Buzzard's Bay, Massachusetts, in 1873, just before his death, and her monumental two-volume work *Louis Agassiz: His Life and Correspondence* (1885) is still described as a “service to science” that “cannot be exaggerated.”

In addition to her importance as her husband's biographer and amanuensis, she was a pioneer in women's higher education, having founded and directed a select school for women in Cambridge in 1856, while her husband lectured at Harvard. The school, which closed in 1863, served her as an administrative apprenticeship, and after her husband's death, she approached Harvard president CHARLES WILLIAM ELIOT and the influential Harvard psychologist-philosopher William James “about Harvard education for women.” The result was the establishment of the Harvard Annex, which opened its doors to women students in 1879. Taught by Harvard professors, the school proved enormously successful and was incorporated as the Society for the Collegiate Institution of Women in 1882, with Elizabeth Agassiz as president. To honor her retirement, Radcliffe named her its honorary president in 1899. In addition to her collaborative works with her husband, she wrote *Seaside Studies in Natural History* (1865) with

her stepson Alexander, also a naturalist, and *A First Lesson in Natural History* on her own.

age-equivalent scales A somewhat controversial measurement system that converts a raw test score into an age group for which the score represents an average achievement level. Thus, if the average score of 14-year-olds on a test of 100 questions is 70, any score of 70 would be recorded as 14, regardless of the age of the test taker. A 10-year-old or a 17-year-old scoring 70 would receive an age-equivalent score of 14 on the age-equivalent scale.

The controversy surrounding such scales centers on possible misuse and misinterpretation—especially in schools where TRACKING OR ABILITY GROUPING can determine a student’s academic future. Even a gifted student can score below average on an age-equivalent scale if, for whatever reason, he or she has not had access to the information required for the particular test. Similarly, a slower student with a specific fund of information might score higher than the appropriate age group on a specific battery of tests but not be able to function at that level on a sustainable basis.

agnosias A broad range of learning disabilities usually associated with neurological damage and affecting sensory recognition of familiar objects. The degree of agnosia can vary widely and, unless supported by an abnormal electroencephalograph or other diagnostic evidence, symptoms of agnosia can appear in persons not suffering from it.

The sensory agnosias—visual, auditory and tactile—are displayed by an inability to identify, understand or interpret information or objects through each of those senses. However, common children’s games often demonstrate the frequency with which perfectly functional persons are unable to identify familiar objects by touch alone, without the aid of other senses. Other agnosias include autotopagnosia, which

is the inability to identify body parts, and form agnosia, which diminishes or blocks the ability to identify familiar shapes.

As he did about many learning disabilities, the pioneer researcher and neurologist SAMUEL T. ORTON, M.D., believed that the right hemisphere of the brain was “the exact mirrored counterpart” of the left. Although most affected children grow up using only one hemisphere, Orton believed they could often be retrained to use the other to compensate for cell damage in the first.

agraphia An extreme form of DYSGRAPHIA in which the individual has lost the ability to write because of a breakdown in neurological connections between the recognition of a number, letter or word and the motor response needed to write it. Agraphia can occur even when the individual has no muscular paralysis of any kind and can perform other routine manual tasks normally. Agraphics may also have no difficulty reading, speaking, hearing or understanding numbers, letters or words, but their agraphia prevents translation into the muscular activities needed to write.

agricultural education A complex curriculum whose roots lie in the training of farmers and future farmers to obtain maximum productivity from their land and maximum profits from their products at market. In colonial America, agricultural education was limited to an informal family apprenticeship system in which boys routinely helped their fathers maintain the family farm and gradually learned all the skills of planting, harvesting and managing crops, caring for livestock, control of pests, storing grains and produce, butchering animals, repairing tools, building and maintaining fences and maintaining outbuildings, barns and houses.

By the end of the 18th century, however, the farmlands of the Northeast and Middle Atlantic States were exhausted because farmers,

as hardworking as they were, lacked knowledge of proper fertilization and crop rotation techniques. In New England, Yale College president TIMOTHY DWIGHT wrote that "our fields are covered with a rank growth of weeds," because of "insufficient manuring, the want of good rotation of crops, and slovenliness in cleaning the ground." In Virginia, once the world's major supplier of tobacco, entire counties lay barren, unable even to grow wheat, much less tobacco.

Ironically, the decline in American farm productivity came just as demand for produce and livestock was soaring because of an explosive growth of American and European cities. Farmers themselves were as alarmed as political and educational leaders by their scientific and technological backwardness and their inability to profit from growing demand for agricultural products.

Several scientific societies helped somewhat by disseminating the latest advances in British agriculture to American farmers. The three most significant educational factors in reviving American agriculture, however, were the development of the agricultural fair, the founding of science-based "how-to" periodicals for farmers and the founding of private and public agricultural schools. All three institutions remain the educative foundation of American agriculture.

AGRICULTURAL FAIRS

ELKANAH WATSON, a businessman who had made and lost several fortunes by the time he was 50, was the founder of the first agricultural fair. Having scored a sudden and unexpected success raising Merino sheep, he organized 26 neighbors to stage the Berkshire Cattle Show in 1810 to display prize sheep. In 1811, he and the others organized the much broader Berkshire Agricultural Society, which absorbed the Cattle Show and became an annual event.

Encouraged by Watson, the Berkshire societies spread across the New England farmlands,

expanding their annual fairs to combine education with entertainment that permitted entire farm families to profit from the event. Except in the South, farmers themselves joined and supported the societies, and state governments added funds to ensure their success as educative organizations. Southern farmers refused to participate in the agricultural education movement because they feared educating their slaves. Without education, however, slaves were unable to operate the new farm machinery that was helping upgrade the northern agricultural economy.

The Berkshire societies began to lose membership after the Civil War, as farmers found their new technology producing huge surpluses that big-city buyers were bidding down in price. Faced with financial losses, farmers turned to new types of self-help organizations such as the Grange and the Farmers' Alliances, which used political action to lead farmers in the battle against the growing number of trusts.

Through these new organizations, farmers eventually won U.S. government guarantees of price stability through a system of subsidies that assured farmers minimum prices for produce and livestock. The legacy of the Berkshire societies, however, continues in the still-popular state and county agricultural fairs that remain an integral part of American agricultural life.

AGRICULTURAL PUBLICATIONS

The first successful farm publication was the *American Farmer*, an eight-page weekly founded in 1819 by John Stuart Skinner. Though not a farmer, Skinner had become alarmed by the exhausted lands and decline in farm productivity in his native Maryland. Skinner's weekly was the first of about 400 farm publications that would be published by the time of the Civil War. About 50 to 60 survived by then, with a total circulation of more than 250,000 farmers, to whom they disseminated information about the latest farm-management techniques.

AGRICULTURAL SCHOOLS

The third factor in the revival of America's vital agricultural economy was the founding of new agricultural schools and the introduction of agricultural courses in existing schools. The first of these was the Gardiner Lyceum, which opened in Maine in 1821 to offer courses to farmers and "practical men however employed," to make them "skillful in their occupations." The Rensselaer Institute opened in New York three years later, offering courses in chemistry, botany and zoology, along with teaching demonstrations of "agricultural techniques and the use of fertilizer in the cultivation of vegetables."

Under pressure to help educate farmers and build a firm and lasting foundation for U.S. agriculture, academies and colleges across America began expanding their curricula to include agricultural courses and programs. In 1855, the state of Michigan opened the Michigan Agricultural College, and in 1862, the U.S. government joined the effort by passing the first Morrill Act. Often called the Land Grant College Act, the first Morrill Act created a department of agriculture, headed by a commissioner, and granted federal lands to each state to build at least one college offering "practical education." Under the law, each state would receive 30,000 acres for each senator and representative in Congress, and each college it built would have to offer complete courses of education in agriculture, mechanical arts, and military tactics, as well as scientific and classical studies.

In 1890, Congress passed a second Land Grant College Act that provided annual appropriations for all the land-grant colleges, which later evolved into today's system of state universities. A year earlier, Congress had elevated the Department of Agriculture to cabinet status and thus added a new dimension to U.S. agriculture education that would continue to this day through the various educational programs

and experimental work conducted by the department. The thrust of many of the department's programs has changed, however, as the number of professional farmers has declined. Indeed, since 1900, when nearly half of all Americans lived on farms and ranches, the number of full-time farmers has dropped to fewer than 2 million, and the Department of Agriculture has redesigned many of its educational programs to meet the needs of home and property owners who need information on home design and maintenance, plant and lawn care, pet care, and the design and maintenance of flower and vegetable gardens.

Aguilar v. Felton A 1985 United States Supreme Court decision that declared unconstitutional New York City's use of public employees to provide instruction and services to students in private religious schools.

The city had been using federal funds to provide parochial schools with public school teachers and other professionals to give students remedial education, guidance and clinical services. The Court held the practice a violation of the ESTABLISHMENT CLAUSE of the First Amendment of the Constitution mandating complete separation of church and state. The Court had no objection to the city's providing such services to the same children in the city's own public schools.

(See also CHURCH-STATE CONFLICTS; *EVERSON V. BOARD OF EDUCATION*; *MEEK V. PITTINGER*; *MITCHELL V. HELMS*; *WOLMAN V. WALTER*.)

AIDS education Instruction explaining the transmission and prevention of acquired immune deficiency syndrome. An element of the sex-education curricula in schools across the United States from the early 1990s, AIDS education is now required in most states because of the progression of the disease to epidemic proportions. AIDS has presented the educational community with two major dilem-

mas. The first is to transmit knowledge youngsters need to avoid AIDS. Like all sex education, AIDS education has run into heavy opposition from parents and other groups who believe that parents alone, and not schools, should have exclusive control over sex education. A second problem has been the admission of HIV-positive or AIDS-infected children to school. Despite objections by parents and others who fear the accidental spread of infection, the courts have ruled that public schools must admit such children into their regular classrooms and school programs. Although health professionals have said such practices are safe, the admission of HIV-infected children to some public schools has led to boycotts that have threatened to close the schools.

Aid to Families with Dependent Children (AFDC) A federal welfare program providing funds to children in single-parent families below the poverty level as defined by the federal government. Administered by state welfare authorities, AFDC began as the Aid to Dependent Children program enacted as part of the Social Security Act of 1935, during the Great Depression. Expanded and renamed in 1962 as one of many amendments to the Social Security Act, it has grown into the second largest federal welfare program, after the Food Stamp Program. AFDC disburses more than \$19 billion a year to nearly 20 million families, including about 9 million school-aged and preschool children.

Like its predecessor program in the 1930s, AFDC has been the target of criticism from sociologists and many political leaders who say that, by making two-spouse families ineligible for aid, it encourages poor males to eschew or dissolve their marriages. In the past 20 years alone, the percentage of two-spouse families has declined from 64.3% to 46% of black families, from 74.1% to 67.6% among Hispanics and from 89.9% to 81.3% among white families.

Air Force Reserve Officer Training Corps A two- or four-year program in which young men and women may earn commissions in the United States Air Force while attending college. Offered for academic credit at more than 140 four-year colleges, the Air Force ROTC offers a monthly stipend to all participants and partial or full scholarships on a competitive basis. Students in the program combine four hours of courses a week of military studies—military history, military science, and so on—with a conventional academic college curriculum. During the summer break between sophomore and junior years, students have six weeks of field training. Successful graduates earn a bachelor's degree and a commission and must serve four to eight years as an officer in the U.S. Air Force. Their length of service depends on the type of training they select. Pilots, for example, must serve eight years; navigators five. The Air Force ROTC also offers a Health Professions Program that covers college costs and the costs of medical, dental and nursing school, and requires a seven- or eight-year postgraduate service commitment.

Alabama The 22nd state to join the Union, in 1819. Except for Mobile, the state had no county or local schools until 1854, when the legislature authorized the establishment of a state public school system, though without funding. Education remained private and was reserved for the wealthy for most of the rest of the century. The results are still evident. In June 1993, an Alabama Circuit Court judge ruled the state's schools "inadequate by virtually any measure of educational adequacy" and in violation of the state's constitution, which guarantees all Alabama children "a thorough and efficient . . . liberal" education. State officials are attempting to remedy the situation, but reorganizing the school system and retraining teachers may require a decade or more.

With 25% of its children living in poverty, Alabama students ranked 48th in the nation in

academic proficiency in 2005—before the devastation of Hurricane Katrina left families, homes and schools on the Gulf Coast in ruins. Only 22% of fourth grade and eighth grade students were proficient in reading, and only 15% of eighth graders were proficient in math. Nearly 40% of the state's more than 735,000 elementary and secondary school students are minority students, and 25% of the state's students live in poverty. The state has more than 1,500 public elementary and secondary schools.

In 1915, Alabama enacted laws authorizing collection of local property taxes to fund public schools and require annual attendance. The length of time for such attendance was left to the discretion of each community until 1927, when the state set seven months as the minimum; this was increased to eight months in 1943 and nine months in 1947. Free textbooks were not offered to students until 1965.

Like all southern states, Alabama maintained rigid segregation of the races in its schools until the 1954 U.S. Supreme Court decision in *BROWN V. BOARD OF EDUCATION OF TOPEKA*. Led by Governor George Wallace, state officials refused to comply with the Court's ruling, and Wallace physically attempted to block the door to the registrar's office at the all-white University of Alabama, when Autherine Lucy attempted to become the first black enrollee in 1956. After an assistant U.S. attorney general removed the governor from Lucy's path, she enrolled, but she was later expelled for academic failure. Seven years passed before the next blacks were admitted and the university began its slow conversion to a racially integrated university. Public schools were equally slow to integrate. In 1967, a three-judge federal court panel issued an order requiring *AFFIRMATIVE ACTION* to desegregate Alabama public schools.

Alabama has a total of 75 colleges, 46 of them public and the rest private. Eighteen of the public institutions are four-year colleges

and the rest two-year colleges. Graduation rates at four-year institutions range from 21% at Alabama State University to 75% at Birmingham-Southern College. The state's two largest public institutions are the University of Alabama, with three campuses, in Tuscaloosa, Birmingham and Huntsville, and a total of more than 40,000 students, and Auburn, whose two campuses at Auburn and Montgomery host a total of about 28,000 students. The state's private colleges include seven historically black institutions, such as Tuskegee University (see *TUSKEGEE INSTITUTE*) and Stillman College.

Alaska The 49th state admitted to the Union, in 1959. Alaska's educational tradition predates its acquisition by the United States from Russia in 1867. Russian colonist Griegor Ivanovich Shelikof opened the first formal school in Kodiak in 1785 to teach arithmetic, Russian and Christianity to the growing numbers of white and mixed-race children. In 1799, the Russian-American Company established small schools at company trading posts around the territory. They continued to operate until the United States purchased the territory.

The federal government virtually ignored its new acquisition and allowed education to all but cease until 1885, when Congress finally responded to demands from territory residents for a \$25,000 appropriation for the education of territory children. The principal spokesman for the residents was the Rev. Sheldon Jackson of the Presbyterian mission in Alaska. He used the funds to start Alaska's first six public schools along the populated panhandle region and on the Aleutian island of Unalaska.

During the first half of the 20th century, control over public schools was subject to constant jurisdictional battles between the territorial government and the Department of Interior's Bureau of Indian Affairs. All public schools eventually came under the control of the state government, however, and they now

rank high among the nation's public school systems because of the state's enormous oil wealth.

Fewer than 30% of Alaska's fourth grade and eighth grade students are proficient in reading, and only slightly more than 30% are proficient in math. Students scored about average for the United States in math proficiency, but Alaska's fourth graders finished 41st and its eighth graders finished 34th among the 50 states in reading proficiency. The state's 522 public schools host 136,000 students, of whom 60.4% are white and 25.5% are American Indian and Alaskan Natives (Aleut, Eskimo, and so on). The remaining students are Asian or Pacific Islanders, black, and Hispanic. About 14% of Alaskan students live in poverty. The state's only university is the University of Alaska, with some 24,000 students on three campuses—in Anchorage, Fairbanks and Juneau. All offer associate and bachelor's degrees. The state also has two-year public colleges and three small, private four-year colleges, including Alaska Pacific University, with nearly 700 students, in Anchorage, and Sheldon Jackson College, with 240 students, in Sitka. Graduation rates average only 40% at the state's colleges.

alcohol abuse The use of alcohol to a degree that impairs normal functioning. Between 15% and 20% of 12- to 17-year-olds reported using alcohol at least once a month in 2005, with the percentage rising to almost 50% for high-school seniors. More than 54% of adolescents say they have tried alcohol by the time they reached eighth grade. Two out of three American adolescents surveyed by the Carnegie Council on Adolescent Behavior said they had started drinking alcoholic beverages by the time they were in ninth grade.

Schools across the nation have added substance abuse education to standard health and hygiene courses, but such education has had limited effect, and it remains as much a center

of controversy as SEX EDUCATION over the question of whether it actually dissuades risk-prone children from experimenting with alcohol or tempts them to try to experience the sensations it produces.

Under a congressional mandate, the U.S. Public Health Service established the Alcohol, Drug Abuse, and Mental Health Administration (ADAMHA) in 1973. Its Division of Prevention, in cooperation with the National Institute on Alcohol Abuse and Alcoholism, supports alcohol-prevention programs in many schools. Many colleges and universities have on-campus alcohol abuse clinics offering education, counseling and clinical treatment for student, staff and teacher alcohol abusers. New Jersey's state university Rutgers started the nation's first on-campus alcohol- and drug-recovery program in 1983. Since then, colleges across the nation—notably Augsburg College (Minnesota), Dana College (Nebraska), Case Western Reserve University (Ohio), Grand Valley State University (Michigan), University of Texas at Austin, and Texas Tech University—have introduced on-campus alcohol-recovery programs for recovering alcoholics, including special housing in alcohol-free dormitories, on-campus support groups such as Alcoholics Anonymous, and organized activities that isolate alcoholic students from bars and on-campus drinking parties. Most colleges report relapse rates of only about 20% among students in such programs. Few comparable programs exist in high schools for preadolescent and adolescent alcohol abusers.

Alcott, Amos Bronson (1799–1888) Teacher, philosopher, author and eccentric visionary whose educational reforms liberalized American teaching methods and produced the first experiments in child-centered education. Born the son of a poor mechanic-farmer in Connecticut, Alcott attended local schools in Wolcott, Connecticut, but was largely self-educated.

Free-spirited (some called him irresponsible), he grew up tinkering and reading. At the age of 19, he began four years as a peddler, wandering through the South and, by trading for books he had not yet read, continuing his self-education.

In 1823, he returned to Connecticut to teach school near his boyhood home. Adopting the motto "Education's all," he introduced revolutionary child-centered teaching methods that caused a mixture of admiration, puzzlement, consternation and anger among parents of his charges. Like many thinkers of his day, Alcott was a Transcendentalist, who believed that each child's character was a gift of God, which the teacher/parent/mentor should nurture and nourish rather than alter or mold in any way. To that end, he dispensed with corporal punishment and introduced play, gymnastics and libraries. He used the honor system and allowed students to determine their own punishments. The worst of these was for the student to have to strike the teacher's—that is, Alcott's—hand with a ruler.

Most revolutionary of all, however, he discarded required textbooks and used gentle, persuasive conversations with students to instruct and inform. He used plain language at all times, breaking every element of teaching down to short steps, relating each new bit of knowledge "to familiar objects and occurrences [*sic*]." He encouraged students to turn to the books he supplied to explain, reinforce or supplement the knowledge gained in conversations.

His conversations produced scores of innovative, and now classic exercises, learning devices and teaching techniques, which he eventually codified in *The Record of a School: Exemplifying the General Principles of Spiritual Culture* (1836), a book edited by his assistant Elizabeth Peabody. His other voluminous writings on the teaching methods he developed and tested sired the 20th-century progressive education movement and most of the child-

centered educational techniques now standard in most schools. Although admired by teachers and educators, parental opposition forced him from school to school. By 1833, he had taught in five different schools in three states over the previous 10 years. Moreover, his imprudence in buying books for the libraries of each school left him almost penniless. In 1834, he opened his own school in Boston—the renowned Temple School, to which the most prominent members of Boston's society immediately sent their children. The publication of the first of his two-volume *Conversations with Children on the Gospel* (1836–37), however, caused a furor. Called indecent, obscene and nothing less than heresy, it reiterated his belief in Christianity while denying the divinity of Jesus. Although he said he modeled his own life on that of Jesus, he refused to confuse Christianity's "doctrines with its founder" by worshiping "one of my fellow-beings." By the spring of 1838, all but three children had been withdrawn from his school, and when he admitted a black child the following year, the rest of the children withdrew. He closed his school and ended his teaching career.

His teaching innovations had not gone unnoticed by educators, however. A group of reformers in England founded an experimental school which they called Alcott House to implement his methods. In 1842, he visited the school. While there, he met another eccentric utopian who returned to America with him to help him found "Fruitlands," one of a growing number of utopian communities that were sprouting across the United States. During the summer of 1843, Fruitlands was a gathering place for such intellectuals as Ralph Waldo Emerson, Henry David Thoreau, Nathaniel Hawthorne and other intellectuals, who spent the long summer days philosophizing with Alcott.

Amidst the stimulating conversations, however, Alcott forgot to plant any fruit trees—

or vegetables, for that matter—and because he was a vegetarian, he set his barnyard animals free rather than slaughter them. By the following January, the half-starved Alcott family abandoned Fruitlands, and for the next few years they lived off his meager earnings as a lecturer and tinkerer-handyman.

Alcott later moved his family to Concord to join his friends, among them Emerson, Thoreau and Hawthorne. In 1859, he became superintendent of schools and introduced many of the teaching reforms and innovations he had developed earlier, such as singing and calisthenics. In 1868, the family's fortunes turned for the better when his daughter, Louisa May, wrote of the values that inspired Fruitlands in her best-selling *Little Women*. This and her other books supported her and her parents for the rest of their lives.

Her father continued writing prolifically and organized the Concord Summer School of Philosophy in 1879, which he conducted in his home until 1882, when his mind apparently deteriorated and he at last retired.

Alcott, William Andrus (1798–1859) Educator, author and pioneer reformer who published the first periodical for children and redesigned the American school to make it a healthier, more pleasant institution. Born in Wolcott, Connecticut, he was the grandson of the original settler for whom the town was named. Educated at the district school with his cousin BRONSON, his lifelong passion for education began as a teenager, when he organized a library for the boys in town. At 18, he was appointed to teach school in his own town, as well as in Litchfield and Hartford. He spent every moment of his life teaching. When not in the classroom, he taught children and their parents in their homes. By age 24, he had redesigned each of his school houses, discarding crude, uncomfortable benches in favor of seats with backs. He added grammar to the curricu-

lum and brought flowers, plants and maps into the classrooms to expand children's knowledge and make the classrooms more pleasant.

During the winter of 1824–25, he contracted tuberculosis, which led to his redesigning school houses to provide ventilation—something never done before. It also led him to Yale Medical School, where he earned his medical and surgical degrees and studied physiology to improve his knowledge of children's health. For a while, he became an itinerant physician to remain in the outdoors and improve his own health.

In 1830, he helped found a model school whose structure he designed to include all the healthful improvements he had developed. His subsequent essay on the construction of schoolhouses won an award from the American Institute of Education and became a classic in the field of school construction. Based on the Swiss FELLEBERG school, it combined vocational and academic training and was one of the first U.S. schools with physical education—another Alcott innovation. In 1831, he founded and edited the first magazine for children ever published in the United States, the *Juvenile Rambler*. In 1838, he published his landmark book *A Young Man's Guide*, which went through 18 editions in eight years and taught young men about personal hygiene, proper behavior and character. In a chapter entitled "The Improvement of the Mind," he taught them how to educate themselves, laid out a complete curriculum and suggested the proper books and periodicals to read.

A prolific writer, his 19 volumes on education, 31 volumes on physical education, health and medicine and 14 volumes for families and school libraries influenced a generation of educators, as well as ordinary Americans. His concern with children's health earned him the sobriquet "the Father of Health Education."

***Alexander v. Holmes County Board of Education* (1969)** One of three U.S. Supreme Court decisions to speed the pace of desegregation and

outlaw all efforts to evade it. In the decade following the Court's landmark *BROWN V. BOARD OF EDUCATION OF TOPEKA* decision in 1954, many school districts, counties and states attempted a variety of schemes to preserve racial segregation by conforming to the letter of the law, while disregarding its spirit.

To strengthen the 1954 Supreme Court decision, Congress passed the all-encompassing CIVIL RIGHTS ACT OF 1964, followed by a series of education acts in 1965 to expand federal expenditures to education in desegregated school districts and, thereby, to encourage compliance. Nevertheless, resistance to desegregation continued, and in a series of three major decisions in 1968 and 1969, the Supreme Court crushed that resistance. *Alexander v. Holmes* was the second of these.

The first was *GREEN V. COUNTY SCHOOL BOARD OF NEW KENT COUNTY* in 1968, which outlawed a freedom-of-choice plan that allowed whites not to attend schools with black students and enroll in a body at a white school and leave no seats for blacks to fill. The Court held that the school board had "the affirmative duty to take whatever steps might be necessary to convert to a unitary system in which racial discrimination would be eliminated root and branch." The Court also defined what constituted a segregated and desegregated school, saying that any school with 85% or more of the students of a single race was in violation of the law. It ordered school boards to "convert promptly to a system without a 'white' school and a 'Negro' school, but just schools."

In 1969, after some districts were failing to comply, the Supreme Court responded angrily in *Alexander v. Holmes*. It defined "promptly" by ordering every school district in the South and, indeed, the United States, "to terminate dual school systems at once and to operate new and hereafter only unitary schools." In *United States v. Montgomery County Board of Education* later that year, the Court established racial

ratios for teachers, while reaffirming its earlier student ratios. By then, noncompliance was proving costly—not just in time and money, but in the loss of federal subsidies to education. Federal spending on education had climbed from \$4.5 billion in 1966 to \$8.8 billion in 1970 and would continue climbing to nearly \$20 billion over the next decade. Rather than risk losing its share of such funds, the South capitulated. By 1972, more than 90% of all southern black pupils attended biracial schools, compared to only 76.4% in border states and 89.1% in the North and West.

alexia The inability to read because of brain damage. An extreme form of *DYSLEXIA*, alexia is a form of *AGNOSIA* caused by irreversible neurological disruptions such as a severe stroke. (See also *APHASIA*.)

Alison, Francis (1705–1779) Irish-born Presbyterian clergyman and pioneer educator in the American colonies. Educated at the University of Glasgow, Scotland, he came to America in 1735, settling first in Maryland, then in Chester County, Pennsylvania, and finally in Philadelphia in 1752. He remained there the rest of his life.

Like most clergymen of his day, his obligations in each parish spilled over into education. His passion for teaching soon gained him a national and eventual international reputation as "the greatest classical scholar in America," in the words of Yale College President *EZRA STILES*. When Alison arrived in Philadelphia, "there was not a College, nor even a good Grammar school in four provinces, Maryland, Pennsylvania, Jersey, and New York," Stiles wrote. Alison responded in 1744 by founding a school in Newark, Delaware. His Newark Academy eventually became Delaware College, which is today the University of Delaware.

After the death of the rector at *BENJAMIN FRANKLIN'S* new Academy in Philadelphia, Ali-

son went there to teach. In 1755, he and WILLIAM SMITH reshaped and expanded the curriculum and converted the school into the world renowned College of Philadelphia, which eventually became the University of Pennsylvania. Yale and Princeton colleges and the University of Glasgow all honored him with honorary degrees.

Allegheny Conference on Community Development A regional private partnership started in the mid-1970s to stimulate educational, cultural and economic revival and growth in and around Pittsburgh, Pennsylvania. Working with the Pittsburgh Board of Public Education and the Greater Pittsburgh Chamber of Commerce, the conference sponsors the Allegheny Conference Education Fund, which has raised millions of dollars from corporations and foundations to improve public education. The fund established one of America's earliest cooperative education programs—Partnerships in Education—to encourage business ties to public schools by underwriting teacher-enrichment programs, scholars-in-residence programs, endowed teaching chairs for public schools, special educational projects, work connections to industry and many other schemes. Citing Partnerships in Education as a model for the rest of the nation, the Ford Foundation offers grants to encourage the formation of similar programs elsewhere.

(See also ADOPT-A-SCHOOL VOCATIONAL PROGRAM and COOPERATIVE EDUCATION.)

Allestree, Richard (1619–1681) Professor of divinity at Christ Church, Oxford University, England, provost of Eton College and author of popular devotional literature which, in the absence of schools in the wilderness of North America, became the essential primers for educating colonial children. Allestree's *The Whole Duty of Man* was one of the most influential and widely read books in the American colonies,

and it remained an essential element of school and church curricula for more than a century. *The Whole Duty of Man* gave parents specific instructions on educating their children:

As soon therefore as children come to the use of reason, they are to be instructed, and that first in those things which concern their eternal well-being, they are little by little to be taught all those things which God hath commanded them as their duty to perform; as also what glorious rewards he hath provided for them, if they do it, and what grievous and eternal punishment, if they do not.

allied health professions The vocations in health care that provide direct supportive services to doctors and dentists. Among those in the allied health professions are dental assistants and dental hygienists, dietitians, emergency medical technicians (paramedics), midwives, hospital pharmacists, registered and practical nurses, opticians, physicians' assistants, a wide range of therapists (including occupational, physical, respiratory and speech) and an even wider range of technicians (electrocardiograph, medical laboratory, medical record, radiologic [X-ray], surgical, ultrasound and so on). Formal education and training for each of the allied health professions ranges from on-the-job training programs to formal academic programs in two- and four-year colleges and universities. Many programs require only certificates of completion; others require associate, bachelor's and even master's degrees.

alliteration The repetition of consonant sounds in a series of consecutive words. A popular pedagogical device for children of all ages, alliteration makes phrases more vivid and entertaining, promotes understanding of many concepts, encourages memorization and teaches proper pronunciation of new spelling sounds—as in “Peter Piper picked a peck of pickled peppers.”

Allport, Gordon Willard (1897–1967)

Pioneer psychologist whose research into personality development and behavior led him to conclude that most normal behavior derives from current motives rather than infantile drives, as Freud proposed. The notion dispelled the idea popular among many teachers that children arrive at school with inflexible intellects, personalities and behavioral characteristics, and that the educational establishment can do little to change them.

Allport earned his B.A., M.A. and Ph.D. at Harvard University and spent the majority of his life teaching there. He was both president of the American Psychological Association and editor of the prestigious *Journal of Abnormal and Social Psychology* and was author of a dozen classic books and hundreds of scientific articles on psychology. His landmark works in psychology were *Personality: A Psychological Interpretation* (1937) and *Pattern and Growth in Personality* (1961), and he wrote an important analytical work entitled *The Nature of Prejudice* (1954). Allport's work was influential in the introduction of psychology into the teacher education curriculum.

alma mater A Latin term meaning bounteous or fostering mother and originally applied to such goddesses as Ceres, the Roman goddess of agriculture. Latin was the language in which classes were conducted in English academe, and the term was used in oratory and essays to describe English universities as fostering mothers. The earliest recorded references are those of Sir Walter Scott in 1803 and Thomas Carlyle 1866.

alphabet A set of characters that, individually or in combination, symbolize every sound in a language. Derived from the first two letters of the Greek alphabet (*alpha* and *beta*), the alphabet is usually taught in kindergarten, but no later than first grade. Many American teachers use alphabet rhymes, songs and large flash cards to help stu-

dents memorize and learn to pronounce each letter in the 26-letter English alphabet.

alphabet method An outmoded method of reading instruction that uses the alphabet and letter combinations as sounding devices with which to build words and phrases. Originated in the 16th century, the alphabet method required the beginning reader to memorize the alphabet first, then, with each letter, memorize all the sounds of that letter (for example, *ba, be, bi, bo, bu, by* for the letter "b"). In the third step of the method, the teacher presented students with word lists of successively increasing difficulty, progressing from monosyllabic words of two, three, four and more letters to words of two, three and more syllables. Each word list ended with one or more short reading lessons incorporating words from that list for students to practice by pronouncing each letter and word as they read aloud in unison. Thus, the first lesson in Thomas Dilworth's *New Guide to the English Tongue*, the most widely used speller in 18th century England and America, asked children to recite this poem:

*No man may put off the Law of God.
The Way of God is no ill Way.
My joy is in God all the Day.
A bad man is a Foe to God.*

Using the alphabet method, children in school recited the first line: "En, o, No; emm, ai, en, man; em, ai, wy, may; pee, you, tee, put; o, double eff, off; tee, aitch, ee, the; ell, ai, double you, Law; o, eff, of; gee, o, dee, God." They recited longer words by syllables and combinations thereof, until they built the complete word. The word "example" was read: "ee, ex, ex; ai, emm, am; ex, am, exam; pee, ell, ee, ple; ex, am, ple, example."

Alston v. School Board of the City of Norfolk The second in a 14-year series of five law

suits sponsored by the National Association for the Advancement of Colored People (NAACP), the climax of which came with the 1954 U.S. Supreme Court decision in *BROWN V. BOARD OF EDUCATION OF TOPEKA* declaring racial segregation in schools unconstitutional. In the 1940 *Alston* case, the Court upheld a lower court decision that a different salary schedule for equally qualified and similarly assigned black and white teachers in Norfolk, Virginia, schools violated the due process and equal protection clauses of the Fourteenth Amendment to the Constitution.

Like the three other NAACP cases, *Alston* was designed not to end segregation in southern public schools, but to lay a legal groundwork of Supreme Court decisions that would undermine the separate-but-equal doctrine established in the historic *PLESSY V. FERGUSON* decision of 1896.

(See also SEGREGATION.)

alternative certification (alternate route)

A program available in about half the states to attract the academically qualified into public school teaching without requiring study of pedagogical techniques normally taught in teachers colleges. Alternative certification programs vary from state to state. Most provide a temporary one-year certificate after successful completion of an intensive, short-term training in basic pedagogical techniques. In some states, alternate-route teachers must continue their pedagogical training on a part-time basis while teaching their regular classes. Depending on the state, alternate-route teachers are granted permanent teaching certificates after one or two years of full-time teaching and successful completion of either an M.A. in teaching or the equivalent number of courses in pedagogy and educational psychology.

Bitterly opposed by teachers unions, alternative certification was first used in the 1950s to ease teacher shortages that developed when

postwar economic expansion left teacher salaries noncompetitive with those of industry. Indeed, 40% of the graduates of teacher-education programs went directly to work in private industry and never applied for teaching jobs. Despite the low pay, there were indications that many liberal arts and science graduates who wanted to go into teaching refused to do so because of cumbersome pedagogical course requirements for traditional teaching certificates—requirements that often ignored knowledge in the subject the teacher intended to teach. Indeed, one criticism of American public schools is that traditional certification does not require teachers to have college degrees in the subjects they teach. Academically selective private schools, on the other hand, seldom require formal pedagogical training and prefer, instead, teachers who have majored or at least minored in the subjects they teach. The teacher shortages in many public school districts become so acute that many districts set up their own alternative certification programs, and, in the 1980s and 1990s, colleges and universities stepped into the picture with formalized curricula. By 2000, more than 250 institutions offered alternative teacher certification programs for people who had had careers or baccalaureate degrees in subjects other than education. The programs now provide about 10% of America's new teachers. The vast majority operate in cooperation with nearby public school districts.

Teacher unions argue that alternate certification undermines quality and professionalism of teaching and puts untrained teachers in classrooms with a broader range of children than those in private schools. The latter, say the unions, usually deal mostly with academically gifted, college-bound children. Many public school children, on the other hand, need more than purely academic help in the classroom—the kind of help that only teachers with appropriate pedagogical training can give.

alternative education In general, a broad spectrum of nontraditional teaching programs involving nonacademic curricula in preparation for jobs not requiring four-year college degrees or even, in rare cases, a high school diploma. Despite a national obsession with attending four-year colleges, almost 70% of all the jobs in the United States require only alternative education, and only about 30% require a four-year college degree or more. Technical, sales and administrative support jobs not requiring a four-year college degree account for 28.5% of all jobs, while precision production, craft and personnel jobs account for 13%.

Almost 37% of all jobs are filled by machine operators, fabricators, assemblers, inspectors, transportation workers, handlers, equipment cleaners, laborers, protective service workers, civil service workers (including fire fighters and police officers), household and hospitality workers, agricultural workers in farming, forestry and fishing, and workers in other service occupations. Training for all such jobs is available from one or more of the twelve basic sources of alternative education: comprehensive public high school vocational programs; specialized vocational/technical (vo-tech) public high schools; special-talent "magnet" high schools; cooperative education programs at high schools and colleges; "two-plus-two" tech-prep programs; two-year community colleges; technical institutes; private, not-for-profit junior (two-year) colleges; private, for-profit (proprietary) trade schools; nondegree courses and programs at public and private four-year colleges and universities; employer/union apprenticeship programs; and employer-sponsored training programs. (See individual entries for detailed descriptions of each type of alternative education.)

Although usually used to refer to VOCATIONAL EDUCATION, alternative education can sometimes refer to nontraditional schooling unrelated to practical training—for example, nontraditional

instruction for students with behavioral, emotional, physical or intellectual problems.

(See also ALTERNATIVE SCHOOLS.)

alternative schools Primary and secondary schools offering unique, custom-designed and often experimental educational programs designed sometimes for gifted students but most often associated with high-risk students with behavioral, emotional, physical or intellectual problems. The number of publicly funded alternative schools has declined sharply in recent years, from a high of 2,860 in the 1984–85 school year to well under 1,000 by 1995. There are several reasons for the decline. Simple economics forced some school districts to move alternative school programs into conventional public schools. Free-standing alternative schools are far costlier than conventional schools. Normally limited to about 200 students, they offer each student a faculty advisor, with each advisor seldom responsible for more than about a dozen students. Pupil-teacher ratios are half those of conventional public schools.

Another reason for the decline in the number of alternative schools was enactment of the EDUCATION FOR ALL HANDICAPPED CHILDREN ACT, a 1975 federal law that forced all U.S. public schools to guarantee all children, including the physically, intellectually and emotionally handicapped, "free and appropriate" public school education. The law allows such children to attend regular classes in conventional public schools with ordinary students and thus avoid the stigma often associated with attending alternative schools. Most alternative schools still operating are either special schools for exceptionally talented students in art, music, science or mathematics, or for students so severely disabled physically or emotionally that they cannot function in a conventional school setting.

Pedagogical techniques at alternative schools for high-risk students vary as widely as

the individual personalities and disabilities of the students. Some alternative schools combine instruction with flexible attendance policies that permit students to work. Others provide continuing, intensive, individual help to potential DROPOUTS whose diminished language ability has made school a site of constant failure.

One experimental program called Cities-in-School links social services to public school education in Atlanta, Houston, New York and other cities. Backed by public and private funding, Cities-in-School assigns each high-risk student a professional counselor from a public or private agency to monitor the student's school work and school attendance and to provide continuing, long-term counseling. Much of the criticism leveled at alternative schools, however, derives from the flexibility and lack of standardization in alternative-school education. Lack of standardization has prevented many schools from earning accreditation.

(See also INDIVIDUALS WITH DISABILITIES; EDUCATION ACT; MAGNET SCHOOLS; MAINSTREAMING.)

alumni/alumnae affairs A vital element of school and college administration to promote financial contributions by graduates. Many private schools and colleges depend on voluntary contributions of their graduates for as much as 40% of their annual budgets. Institutions of higher learning in the United States depend on private gifts for between 5% and 6% of their total annual revenues of more than \$200 billion. Of those gifts, about 25% come from alumni, although the percentage varies widely for each institution. Private gifts to public institutions account for less than 4% of annual revenues, while private gifts to private colleges account for about 9% of annual revenues.

Public primary and secondary schools rely almost 100% on government funding for their revenues, with private gifts amounting to less than one-tenth of one percent. Although no

overall figures are available for private elementary and secondary schools, mandatory fees for tuition and, where appropriate, room and board, generally cover only 60% to 90% of annual budgets. The remainder comes from voluntary contributions from alumni, parents and friends.

Alumni relations, then, are vital to private school funding and of growing importance to public institutions, whose government funding is declining. Most private colleges and many public institutions divide alumni affairs into two sectors—development, or fund raising, and alumni relations—with each headed by a vice-president who sits on the policy-making executive board of the institutions. Smaller institutions and schools may combine the two jobs.

Among the key functions of the alumni relations officers are publishing alumni bulletins and ALUMNI MAGAZINES with news of the school and its alumni and notices of forthcoming alumni events; organizing periodic alumni reunions on campus as well as in cities across the United States with significant numbers of resident alumni; encouraging alumni participation in certain college activities such as recruiting and interviewing student applicants or sponsoring alumni dinners for college officials visiting their areas; and encouraging alumni to form local alumni associations and clubs to help publicize their school and raise funds.

The functions of the development office are to obtain voluntary contributions from any and all sources—including alumni, foundations, corporations and nonalumni individuals such as parents and grandparents of students. Private contributions fall into two broad categories—gifts to the endowment, or capital fund, and current gifts for immediate use. In each category, gifts may be restricted by the donor for a specific purpose (scholarship, professorial chairs, etc.) or they may be unrestricted, thus giving the institution complete discretion in the use of funds.

Alumni fund-raising is accomplished in several ways: Periodic mail solicitations as part of the school's "annual campaign"; periodic telephone solicitations by fellow alumni calling their former classmates at organized "telethons"; and individual face-to-face meetings between one or more college officials or fellow alumni, with specific alumni targeted because of their wealth as potential donors of multimillion-dollar gifts for projects that will bear their names.

alumni/alumnae colleges A program of lectures or courses for the alumni/alumnae of a particular college or university. Usually offered by private colleges and universities as an extension of their alumni affairs programs, "alumni college" programs vary widely. Some are simply a series of lectures by a single professor over three days or a week. Others offer alumni opportunities either to audit or enroll in regular courses at college or graduate school, during the academic year. Costs of participation are usually low, because the courses are seldom offered for credit. Enrollment in for-credit courses is limited to those students who have gone through the regular college admissions process and are paying full costs of instruction.

alumni/alumnae magazines Professionally produced, glossy magazines produced by secondary schools, colleges and universities for distribution to alumni. Long in existence as a device for keeping alumni in touch with each other and with events at their old schools, the alumni magazine has evolved into a slick, four-color, glossy publication for stimulating financial contributions. Of the more than 2,500 four-year colleges in America, about 450 produce alumni magazines. Although public universities usually restrict distribution to paid-up members of their alumni associations, private colleges and universities send their magazines to all their gradu-

ates. Depending on average reader income, alumni magazines can be self-sustaining. The median household income of the more than 930,000 readers of magazines in the Ivy League Magazine Network (Yale, Harvard, Princeton, etc.) is \$136,000, and advertising by manufacturers of luxury products lures enormous spending by readers. Class notes are the most widely read features in alumni magazines, and articles dealing with campus problems are also of great interest.

ambilingualism The ability to speak all the languages of a particular country. Virtually synonymous with bilingualism, ambilingualism is usually applied to bilinguals and multilinguals of a particular country with two or more native tongues. Thus, an American fluent in French and English would be bilingual, while a Canadian with the same gift would be ambilingual, as would a Belgian who is fluent in both French and Flemish or a Swiss fluent in German, French and Italian.

American Academy for Liberal Education An accrediting group for undergraduate liberal arts colleges and humanities programs. Formed in 1993 by a group of a dozen leading scholars concerned with the deterioration of liberal arts education, the group accredits institutions on the basis of 17 standards. These include the importance of teaching over other activities such as research; the number of senior faculty members teaching introductory and other lower-level courses; and graduation requirements insuring that at least one-third of a student's course work be devoted to liberal arts courses and the humanities.

Many academy members believed that educational quality at liberal arts universities had declined as professors turned their attention to research and left teaching in the hands of inexperienced TEACHING ASSISTANTS. Academy members were also concerned that some uni-

versities might be flirting with consumer fraud by listing the names of professors in the course catalogs for courses actually taught by teaching assistants. Among the Academy's founders were Harvard University science professor and Pulitzer Prize-winning author Edward O. Wilson and Columbia University professor and author JACQUES BARZUN.

American Academy of Arts and Sciences One of two competing intellectual societies that tried in vain to establish a national system of public education in the first days of the American republic. Many of America's founding fathers agreed that a national system of public education was essential to the ultimate success of the great revolution they had engendered. Where they disagreed was over the question of what knowledge should be taught and whether the curricula should be "ancient" or "modern," that is, classical or practical. The American Academy of Arts and Sciences, supported by John Adams and his son John Quincy Adams, favored a classical curriculum that focused on Latin, Greek, literature and philosophy. Thomas Jefferson, president of the equally influential AMERICAN PHILOSOPHICAL SOCIETY, favored the study of more practical courses such as natural science and natural history. Indeed, he was instrumental in getting modern languages introduced into the curriculum at the COLLEGE OF WILLIAM AND MARY and in persuading the college to drop fluency in ancient languages as a requirement for admission. An angry John Adams responded in a letter, "I would as soon think of closing all my window shutters, to enable me to see, as of banishing the classics, to improve republican ideas."

In any event, neither Adams nor Jefferson succeeded in obtaining congressional support for public education, which the South feared might stir slaves to rebel. The academy's importance to education has continued to this day as an honorary society of leading scholars and a

center for interdisciplinary studies of and seminars on public, social and intellectual issues. It publishes the scholarly quarterly *Daedalus*.

American Association of School Administrators (AASA) The major professional association for public and private school principals and other administrators. Founded in 1865 as the National Association of School Superintendents, it was a department in the NATIONAL EDUCATION ASSOCIATION until 1969, when the disparate interests of NEA teacher members and administrators made it difficult for NEA to function smoothly. AASA provides a variety of professional services for its nearly 20,000 members and lobbies for legislation to improve education. On request, AASA conducts formal audits of curricula and teaching methods at individual schools to determine a school's strengths and weaknesses.

(See also CURRICULUM AUDIT.)

American Association of University Professors A powerful professional organization founded in 1915 by a group that included Columbia University's JOHN DEWEY. Its goals then, as now, were to improve conditions and protect the rights of college and university teachers and researchers. AAUP has been a force in the fight for academic freedom, shared governance, job tenure and the rights of non-tenured faculty, but it leaves most day-to-day operations in the hands of local chapters, which have more than 45,000 members at about 900 two- and four-year public and private institutions across the United States. About half the AAUP membership has collective bargaining agreements with their schools.

American Association of University Women An association of 140,000 graduates of accredited colleges, universities and two-year or community colleges, working for

the advancement of women. Founded in 1881 as the Association of Collegiate Alumnae, the AAUW lobbies Congress on women's issues and conducts important research on a range of topics, including women's education. One of its recent landmark studies presented a "wealth of statistical evidence . . . that gender bias in our schools is shortchanging girls—and compromising our country." Based on hundreds of research studies conducted during the 1980s, the report came to these conclusions:

- Teachers pay less attention to girls.
- Girls lag in mathematics and science scores, and even those who do well in those subjects tend not to choose math and science careers.
- Reports of sexual harassment of girls by boys are increasing.
- Some tests remain biased against girls, hurting their chances of obtaining scholarships and getting into college.
- Textbooks ignored or stereotyped women, and girls learned almost nothing about many of their most pressing problems, such as sexual abuse, discrimination and depression.

The report found that self-esteem of girls dropped faster than that of boys as they approached adolescence—at least in part because of what it termed sexist curricula in schools. Only one of 10 of the most commonly assigned books in high school English classes was written by a woman, according to the report. "Students sit in classrooms that day in, day out, deliver the message that women's lives count for less than men's," said the report.

The report triggered a nationwide effort by AAUW and other women's organizations to ameliorate the status of women in the broad education community. Women now make up more than 60% of the students enrolled in college, 57.5% of students earning bachelor's degrees and nearly 62% of those earning master's degrees. Gender discrimination, however,

continues to pervade American academia, however. Women faculty at American universities, for example, earned from 7% to 13% less than their male counterparts in identical positions in the 2005–06 academic year. And, despite identical mathematics proficiency scores between girls and boys at every age, myths persist about the innate inferiority of women in mathematics and technology-related fields, where they earn only 19% of bachelor's degrees in engineering and 11.5% of bachelor's degrees in engineering-related technologies.

(See also GENDER DISCRIMINATION, WOMEN'S EDUCATION.)

American Baptist Home Missionary Society One of a number of religious organizations that helped found hundreds of mission schools throughout the South to educate former slaves in the decades following the Civil War. The society was responsible for making the Baptist religion the primary religion of southern blacks.

(See also AFRICAN-AMERICAN EDUCATION.)

American Bible Society An organization formed in 1816 to promote the distribution of Bibles and other religious publications—a task it continues to perform to this day. A union of 28 local Bible societies, the American Bible Society sent teams of canvassers through towns and cities across America to visit homes, talk to residents about Christianity, sell Bibles and subscriptions to Christian publications, collect contributions and recruit new members for local churches and Sunday schools. As the nation expanded westward and disorder and heresy threatened the frontier, the society pledged to supply every family in the West and the rest of the nation with a free or low-cost Bible.

Indirectly, many of the women canvassers became involved in education, as they grew friendly with residents and began serving as

tutors for the children in the households where they had sold scriptural materials.

(See also AMERICAN BOARD OF COMMISSIONERS FOR FOREIGN MISSIONS; EVANGELISM.)

American Board of Commissioners for Foreign Missions The first national organization to emerge from the evangelical fervor that swept the United States during the half-century following the Revolutionary War. Formed in 1810 by Congregational and Presbyterian Church leaders, the board was the result of the realization by church leaders that only by working together could they achieve their common goal of making the United States a Christian nation. At the time, charismatic church leaders such as the Rev. LYMAN BEECHER saw their new nation as divine in origin and predicted that its survival hinged on living according to scriptural dictates and waging constant war against Satan. They saw church and state as inseparable, and they formed organizations to teach their countrymen to believe the same. Initially, each group went its own way. The formation of the American Board of Commissioners for Foreign Missions, however, marked a new approach, and, while remaining independent, all such organizations agreed to work together toward a common goal. As new groups formed, each assumed a different function to complement the work of the others. Among the other groups were the American Education Society (formed in 1815), the American Bible Society (1816), the American Sunday School Union and the AMERICAN TRACT SOCIETY (both, 1825) and the AMERICAN HOME MISSIONARY SOCIETY (1826). All were led by a combined board of churchmen and well-to-do landowners and businessmen, and they raised funds from membership fees, church collections and individual contributions.

The American Board of Commissioners concentrated initially on opening mission schools among Indians, to make them “English

in their language, civilized in their habits and Christian in their religion.” Congress supported the effort with a Civilization Fund of \$10,000 a year. The board founded schools among the Iroquois of northern New York and Vermont, the Cherokees in Georgia, the western Carolinas, Tennessee and Arkansas, the Choctaws in Mississippi and the Cephass in Arkansas. It eventually expanded its work to American territories such as Hawaii and to the Far East and Africa. From 1820 to 1855, it sent more than 150 missionaries, including ministers, teachers, doctors, printers, farmers and businessmen to Christianize and Americanize Hawaii.

As the board’s work expanded, it shared its tasks with the other national organizations. The American Home Missionary Society took responsibility for missions in the newer and poorer regions of the United States, while the board concentrated on foreign missions. The American Education Society concentrated on training evangelical ministers to establish schools, academies, colleges, youth groups, discussion circles and other formal and informal educational organizations. The Sunday School Union, Tract Society and Bible Society handled publication and dissemination of scriptural and appropriate nonscriptural texts for use in mission schools as well as homes. The Sunday School Union also founded thousands of Protestant Sunday schools across the United States.

Like all religious schools of the time, both board and union schools combined secular and religious studies and often provided the only formal education for children in isolated areas with no access to secular common schools. In the 1830s and 1840s, the board and its sister organizations extended their educational efforts to arriving immigrants and to the poor. Until public education made mission schools unnecessary after the Civil War, the board remained one of the most ubiquitous forces and influences in 19th-century education. Although its goal was to popularize

Christianity, its primary lasting success was in popularizing education.

(See also *EVANGELISM*.)

American Council on Education A non-profit, Washington-based organization of American colleges. It is the nation's largest association of colleges and universities and the largest nongovernmental body in higher education. Founded in 1918, the council has a number of divisions. One is purely a lobbying group that represents the interests of higher education in Washington. Another formulates acceptable policy positions for its members, while a third produces studies and reports on institutional management and curricula, as well as original research in these fields. Another council division, G.E.D. Testing Service, administers the General Education Development Program, which offers standardized examinations that permit anyone of any age to obtain a high school diploma without attending formal classes.

American Education Society An organization founded in Boston in 1816 for "educating pious youth for the gospel ministry." One of many national organizations that emerged from the evangelical fervor that swept the United States during the half-century after the Revolutionary War, the society was, however, as committed to spreading secular education as it was to spreading the Christian gospel. Indeed, it trained only evangelical ministers willing to accept two obligations—namely, to serve as missionaries and to establish schools, academies, colleges, youth groups, discussion circles and other formal and informal educational agencies. It also provided financial aid to new institutions with similar goals, such as Oneida Institute, which eventually became OBERLIN COLLEGE, and the Rev. LYMAN BEECHER's Lane Seminary in Cincinnati.

(See also *EVANGELISM*.)

American Federation of Labor A confederation of workers formed in 1886 by 25 craft unions. In 1902, the AFL embraced and encouraged the growth of the early teachers unions. It was a driving force in gaining passage of the SMITH-HUGHES ACT in 1917, providing for federal assistance for the establishment of vocational education in public high schools. The act incurred fierce opposition from private industry, which wanted to control all vocational education through company-operated apprenticeship programs that bound future workers to their jobs by teaching only enough skills to work in a particular company plant and nowhere else. In 1955, the AFL merged with the Congress of Industrial Organizations, an industrial union founded in 1935 to expand unionism to noncraft, assembly-line workers in industries such as automobile manufacturing. At the time, the combined membership of the new AFL-CIO was 15 million, but, as American assembly plants moved to lower-wage areas in foreign countries, union enrollment declined to about 13 million, and the percentage of unionized American workers plunged from 35% of the workforce to a mere 12.5% of all workers and only 7.8% of workers in the private sector. The struggle to preserve rapidly declining non-craft, assembly-line jobs in the United States—and the methods of doing so—produced huge rifts in the AFL-CIO leadership, and, by 2006, five former CIO industrial unions had withdrawn from the umbrella AFL-CIO coalition, reducing the number of participating AFL-CIO unions to 52. In 2006, however, the AFL-CIO climaxed a concerted effort to rebuild membership when the nation's largest union, the NATIONAL EDUCATION ASSOCIATION, announced it would allow its 13,200 local chapters to join the AFL-CIO—a decision that promised to increase AFL-CIO membership by at least one million members.

American Federation of Teachers An international labor union for teachers. Now

affiliated with the American Federation of Labor, the American Federation of Teachers traces its origins to 1897, when Catherine Coggin and Margaret Haley, two Chicago classroom teachers, split with the National Education Association and formed the Chicago Teachers Federation. Other female classroom teachers in New York, Los Angeles, San Antonio, Washington, D.C., and other cities formed similar groups to protest exploitation by predominantly male school administrators and school boards. In 1902, the San Antonio and Chicago groups joined the AFL and 14 years later, merged with other dissident NEA member groups to form American Federation of Teachers.

At the time, women teachers were denied job security and academic freedom and worked for salaries 50% below those of male teachers with the same rank, training and experience. Unlike the older, male-dominated National Education Association, whose top priority was school operations, the new female-dominated federation made its primary goals higher salaries, better working conditions and job security. To those priorities the AFT has since added fringe benefits and pension schemes, as well as collective bargaining agreements in nonunion schools and school districts. Initially limited to teachers below the rank of principal, AFT membership of about 1.3 million now includes about 400,000 nonteachers, such as nurses and even meat inspectors, who account for nearly half its membership. Most of its teachers work in urban schools. AFT assists its more than 3,000 locals in winning collective-bargaining agreements and in conducting elections and strikes. It offers members liability insurance and group health, life and accident insurance. Its Legal Defense Fund defends teachers when state laws forbid union organizing or striking by public employees. AFT also publishes a number of important periodicals, including *American Educator*, *American Teacher* and *Action*.

Despite a century of conflict, the AFT and NEA moved to merge their two organizations in 1998, in an effort to increase the political power of American teachers. With NEA membership of 2.7 million teachers and school-support workers such as janitors and cooks, the combined organization would have more than 4 million members with annual revenues approaching \$2 billion—enough to influence political policy in education across the nation and influence state policies on school VOUCHERS, SCHOOL CHOICE and other issues teachers oppose.

American Field Service A voluntary organization that provides grants to American students to study abroad and to foreign students to study in the United States. Founded in 1914 as a volunteer ambulance service to help the French army in World War I, the AFS discontinued its original function after the armistice in 1918. Its American members had formed such close ties to French colleagues, however, that they developed the concept of international student exchanges for Americans to pursue graduate studies in France and for French students to come to American universities. Now called AFS International Programs the AFS effected only a few hundred such exchanges between the two world wars, and the organization resumed its original function in 1939 at the outbreak of World War II. In 1947, however, the scholarship program resumed, and the AFS subsequently extended its reach to more than six dozen countries and to tens of thousands of American and foreign exchange students.

American Home Missionary Society One of many national organizations that arose from the evangelical fervor that swept the United States during the half-century following the Revolutionary War. The society was formed in 1826 by a group of wealthy Protestant parishioners to subsidize ministers in the newer states

and territories, which they perceived to be threatened with disorder and nonbelief.

American Indian Any of the people native to North America when Christopher Columbus first landed in the Western Hemisphere. In education, American Indians represent 0.8% of the population enrolled in U.S. institutions of higher education—about the same proportion as they represent in the general population.

Of the 4.2 million Americans who describe themselves as full-blooded Indians (nearly 2.5 million) or Indians of mixed blood (1.6 million), 48% live in the West, 29% in the South, 16.1% in the Midwest, and 6.6% in the Northeast. Six states have 100,000 or more full-blooded Native Americans: California, 333,000; Oklahoma, 273,000; Arizona, 256,000; New Mexico, 173,000; Texas, 118,000; and North Carolina, 100,000. Five other states—Alaska, Washington, New York, Michigan and Florida—have combined populations of more than 100,000 full-blooded Indians *and* Indians of mixed blood. Only about 29% of American Indians 25 years or older have high school diplomas, compared with 84.6% for the general population and 80% for African Americans. Only 7.6% of American Indians have bachelor's or graduate degrees, compared with 27.2% for the general population, and fewer than 18% of American Indians 18 to 24 years old are enrolled in college, compared with 41.6% of white non-Hispanics, 32.3% of black non-Hispanics, 23.5% of Hispanics and 60.3% of Asian/Pacific Islanders. American Indians have the lowest college graduation rate of any minority group—36.5%.

In an effort to increase college enrollment of American Indians, a number of colleges and universities have established outreach programs to increase Indian enrollment and to provide counseling and tutoring once they arrive on campus. Syracuse University has established a Native Student Program that pro-

vides its Indian students with American Indian mentors. Cornell, Dartmouth and Harvard colleges have established cultural centers as well as counseling and tutoring programs. As the 20th century came to an end, however, academic achievement among American Indians was improving—largely because of a transfer of control of Indian education from the U.S. government BUREAU OF INDIAN AFFAIRS to local tribes. Prior to tribal control, only about 60% of Indian children were enrolled in schools, and, on average, they scored 11% below white students in verbal and mathematics Scholastic Assessment Tests. Indian fourth graders (nine-year-olds) scored 17% below white students of the same age. By the end of the 20th century, tribal control of elementary and secondary schools had narrowed the gap between Indian and white children considerably. Scholastic Assessment Test scores of Indian high school students were only about 5% lower than those of white students and more than 12% higher than those of African Americans. Among fourth graders, reading proficiency of American Indians ranked 11% below the average scores for white children, but 2% above black children. About 160,000 American Indians are enrolled in college or university.

The history of American Indian education is intricately tied to the unrelenting efforts by the Christian churches to convert Indians to Christianity. The process may have started in Virginia, in Jamestown, in 1612, when the Rev. Alexander Whitaker converted the captured Indian princess Pocahontas. Baptized Rebecca, she married colonist John Rolfe and, in 1616, went to England, where she was received by the king and queen. Enjoined to “go forth and teach all nations,” many of the earliest priestly settlers believed that the “noble savages” they found in the new world thirsted for the gospel. In fact, some Indians admired enough of the white man's ways to respond to the call to Christianity as a simple price to pay for the

material goods the white man provided in exchange. The two earliest missionaries to devote their efforts to converting Indians were the Puritan clergymen the Rev. Thomas Mayhew Jr., of Martha's Vineyard, and the Rev. JOHN ELIOT, of Roxbury, in the Massachusetts Bay Colony. By 1652, Mayhew had converted nearly 300 Indians, while Eliot was conducting regular services for Indian sachems at Nonantum, on the Charles River, through which he persuaded many to adopt English ways by moving into so-called "praying towns." In 1649, the English Parliament created the COMPANY FOR THE PROPAGACION OF THE GOSPELL IN NEW ENGLAND to raise funds to support Mayhew's and Eliot's efforts. In 1651, Eliot used society funds to acquire 2,000 acres on the banks of the Charles, about 18 miles from Boston, to help Indian converts found Natick, the first of 13 Indian praying towns they would build over the next 14 years. In 1663, Eliot translated the Bible into Algonquian in hopes of making conversion a smoother process. By 1675, Eliot, Mayhew and other missionaries had converted an estimated 2,500 New England Indians to Christianity—about 20% of the local Native American population. Most lived in the praying towns, in apparent contentment with their colonist neighbors.

Colonist encroachments elsewhere in New England, however, provoked the Indian tribes to form a confederation that engaged the colonists in what is now known as King Philip's War. A year later, Philip lost and was killed, and the majority of Indians abandoned southern New England to the English.

The Society for the Preservation of the Gospel in New England (S.P.G.), however, continued to support efforts to convert the Indian, by supplying clothing, building materials and tools and paying the salaries of ministers and schoolmasters to teach them. Eliot, meanwhile, translated the primary sacred texts and prayer

books into Algonquian, and S.P.G. not only built a library to house them but an Indian College at Harvard. The college, however, failed for lack of qualified students. Although five Indians are known to have enrolled, only one, Caleb Cheeshahteumuck, earned his bachelor's degree, but he died of tuberculosis a year later.

Although Eliot continued to serve as an "apostle to the Indians" to the time of his death in 1690, his efforts had diminishing success in the face of colonist exploitation and mistreatment of Indians. A few individual missionaries in New England continued his work. The Rev. Eleazar Wheelock, a liberal "New Light" Presbyterian, tutored and converted young Indians, along with white youths, in his parsonage in New Hampshire. He eventually expanded his school into an academy which later was granted a charter in 1769 as DARTMOUTH COLLEGE.

Meanwhile, the S.P.G. redirected its efforts to teaching and converting the Mohawks in the Albany, New York, area. From 1702 to 1769, the S.P.G. established at least three schools that managed to bring some degree of literacy to hundreds of Indian youths but, because of continual colonist exploitation, produced few converts to Christianity. S.P.G. efforts to educate and christianize American Indians came to an end by the time of the Revolutionary War.

The optimism that came with the founding of a new nation revived the sentiment for assimilation of American Indians into the white Anglo-American community, however. As Thomas Jefferson put it, Native Americans were "formed in mind as well as body, on the same module with the 'Homo Sapiens Europeaus.'" Jefferson called for Indians and whites "to intermix, become one people. Incorporating themselves with us as citizens of the United States, this is what the natural progress of things will of course bring on, and it will be better to promote it than retard it." President George Washington launched a series of programs to help

Indian tribes to convert from a hunting and trapping economy to an agricultural way of life. Washington had widespread support. Although the tribes remained foreign nations, Congress allotted \$15,000 a year for Washington to promulgate various programs to promote trade with friendly Indian tribes and to send agents among them to teach them agriculture and homemaking and to help them set up factories and trading posts. Adams and Jefferson continued the so-called civilization programs.

On the educational front, Presbyterian and Congregationalist ministers from the AMERICAN BOARD OF COMMISSIONERS FOR FOREIGN MISSIONS supported the government's efforts by fanning out across New York, Vermont, Tennessee, Mississippi, Arkansas and elsewhere to open mission schools for Indians. In the South, the Cherokee Nation thrived under the assimilation policy. Made up of about 17,000 people in 40 villages in Georgia, the western Carolinas and Tennessee, the Cherokee Nation had signed the Treaty of Holston in 1791 and accepted Washington's 1796 offer of funds and technical assistance to convert from a hunting to an agriculture economy. Moravian and Presbyterian missionaries established schools in each of the villages, and by 1817 a Cherokee delegation was in Washington to ask for additional funds for more schools and for plows, hoes, spinning wheels and other equipment to make the Cherokee Nation American in every way.

The result was the construction of eight mission boarding schools, including the BRAINERD MISSION, which educated and Christianized hundreds of Cherokee children and led to a written Cherokee language and a Cherokee newspaper, thus helping to advance literacy throughout the Cherokee nation. By the end of the 1820s, the Cherokee drew up a constitution based on the U.S. Constitution and proclaimed themselves a republic, modeled on that of the United States. Unfortunately, white

sentiment toward the Indian had changed radically. During the War of 1812, a number of Indian tribes, angry at settler incursions into their lands, collaborated with the British. Presidents Madison and Monroe both soured on the Indian civilization process, and by the time the veteran Indian fighter Andrew Jackson assumed the presidency, Congress had adopted a new policy that reflected the lust of Americans to farm the vast unsettled lands that Indians reserved for hunting and trapping.

In 1830, Congress passed the Removal Act, which "reserved" the lands west of the Mississippi for tribes who ceded the lands they occupied to the east. Removal replaced assimilation as the official policy of the federal government and even the Cherokee, who with the government's official encouragement and financial help had adopted the white man's ways, were forced to leave their ancestral lands. The resettlement was an economic, social and educational disaster. Not only was the land unfit for farming, western Indian tribes had long ago claimed the lands west of the Mississippi as their own, and they resisted efforts of the new arrivals to encroach on their territory. Moreover, the removal did not prevent further encroachments by white farmers and squatters. With the help of the army, the lands reserved for Indians grew smaller, and as they fought to preserve what they had, the army imprisoned or massacred them. The Indian Act of 1834 established an Office of Indian Affairs to regulate trade in the new Indian territories, but unscrupulous white traders brought whiskey, guns and horses that added ammunition to the growing conflicts between Indians and whites. Indian agents, appointed by Washington to protect Indian rights, were more often agents of graft and corruption, selling off Indian land, timber and minerals.

Missionary-teachers continued their efforts to bring education to the Indians, but their efforts were largely useless in the face of over-

whelming Indian suspicion of the white man's every word. Moreover, there were so many Christian denominations that many Indians began questioning the validity of Christianity and began returning to their own, ancient beliefs. Chief Joseph of the Nez Perce warned that Christians "will teach us to quarrel about God as the Catholics and Protestants do. . . . We may quarrel with men sometimes about things on this earth, but we never quarrel about God."

In 1887, Congress tried to end the reservation system by allotting tracts of 160 acres each to Indian heads of households. The Dawes Act, as it was called, proved a failure, as unscrupulous traders bilked family after family of its property. In 1887, Indians owned about 138 million acres. By 1932, they retained less than 40 million. In the meantime, the Bureau of Indian Affairs had imposed a new system of compulsory education, whereby the sparsely settled children's population on the reservations were forcibly brought to central, reservation boarding schools. There, they learned trades which, as often as not, proved obsolete or useless on the barren reservation lands. Although the Citizenship Act of 1924 granted Native Americans *de jure* citizenship, it was not until the civil rights struggle of the 1970s and 1980s that they, along with African Americans, Hispanics, Asian Americans and other minorities won *de facto* citizenship and the same educational rights as all American citizens. In 1972, the Indian Education Act authorized a battery of new educational programs for Indians, including grants to local educational agencies and special literacy and job-training programs for Indian adults. By the early 1990s, these programs had reached about 78% of the more than 500,000 Indian children in the United States.

Two subsequent laws have also improved Indian education. The Indian Self-Determination and Education Assistance Act of 1975 and the Indian Education Act of 1978 together stripped the Bureau of Indian Affairs of many

of its powers and turned control of education over to Indians. The 1975 law allowed tribal groups to operate their own educational facilities, while the 1978 act empowered local Indian school boards to hire teachers and school staff, without interference from Washington. It also provided for direct funding of schools by the Bureau of Indian Affairs, which now underwrites more than 200 facilities, including day schools, on- and off-reservation boarding schools, tribally contracted schools and dormitories that permit Indian students to attend nearby white public schools. In 2000, the U.S. Department of Education created an Indian Teacher Corps to train 1,000 teachers to begin replacing the largely non-Indian teachers who work in reservation schools and have extraordinarily high turnover rates. At the same time, the federal government began giving annual scholarship grants averaging about \$3,000 to nearly 14,000 students attending America's 30 tribal-run Indian colleges. The Indian colleges serve more than 250 tribes in 12 western and mid-western states. Twenty-three are two-year colleges, and, in 2000, 85% of students were from families with incomes below the poverty level.

American Indian tribal colleges A group of 30 federally subsidized, tribal-run colleges serving about 14,000 American Indians and Alaskan natives from more than 250 tribes in 12 states:

- Arizona: Dine College (public, two-year)
- California: D-Q University (private nonprofit, two-year)
- Kansas: Haskell Indian Nations University (public, four-year)
- Michigan: Bay Mills Community College (public, two-year)
- Minnesota: Fond du Lac Tribal and Community College (public, two-year)
- Leech Lake Tribal College (public, two-year)
- Montana: Blackfeet Community College (private nonprofit, two-year)

Chief Dull Knife College (private nonprofit, two-year)
 Fort Belknap College (public, two-year)
 Fort Peck Community College (public, two-year)
 Little Big Horn Community College (public, two-year)
 Salish Kootenai College (private nonprofit, four-year)
 Stone Child College (public, two-year)
 Nebraska: Little Priest Tribal College (private nonprofit, two-year)
 Nebraska Indian Community College (private nonprofit, two-year)
 New Mexico: Crownpoint Institute of Technology (private nonprofit, two-year)
 Institute of American Indian Arts (public, four-year)
 Southwestern Indian Polytechnic Institute (public, two-year)
 North Dakota: Candeska Cikana Community College (public, two-year)
 Fort Berthold Community College (public, two-year)
 Sitting Bull College (public, two-year)
 Turtle Mountain Community College (public, four-year)
 United Tribes Technical College (private nonprofit, two-year)
 South Dakota: Oglala Lakota College (public, four-year)
 Si Tanka College (public, four-year)
 Sinte Gleska University (public, four-year)
 Sisseton-Wahpeton Community College (public, two-year)
 Washington: Northwest Indian College (public, two-year)
 Wisconsin: College of the Menominee Nation (private nonprofit, two-year)
 Lac Courte Oreilles Ojibwa Community College (public, two-year)

American Instructor, The By far the most widely used of the thousands of popular examples of didactic literature that flooded the American colonies during the 18th century. Cheap land, a boom in foreign trade and con-

stant labor shortages had put ingenuity, diligence and hard work on a par with inheritance as almost certain methods of obtaining wealth, status and power. Without schools, however, most would-be craftsmen were without the required literacy and skills. They turned for help to “how-to” books, and between 1689 and 1783, some 40 publishers throughout the colonial provinces had issued more than 18,000 titles.

Among the most popular were *The New England Primer* and *The American Instructor*. The former offered its readers literacy; the latter, an encyclopedia of information designed to further one’s career. It taught grammar and syntax, proper handwriting techniques, sample social and commercial letters, with all the accepted, stock clichés of the day, and the basics of commercial arithmetic and law. It also offered a lesson on currency values, provided sample commercial documents including bills of lading, invoices, deeds, wills and indentures, and offered practical advice in carpentry and bricklaying, in gardening and preserving fruits and vegetables, in British and colonial American geography, in astronomy and in preserving one’s health and treating illness and disease. Published in 1748 by Benjamin Franklin’s company Franklin and Hall, *The American Instructor* was actually a revision of an older work called *The Instructor: or, Young Man’s Best Companion*, originally attributed to a Mrs. Slack. Without the hindrance of copyright laws, printers throughout the colonies continued to print it in various forms for years thereafter.

Americanization The reshaping, through education, of the human character, regardless of national origins, into one uniquely suited for self-governance within the framework of the Constitution and laws of the United States. (*Americanization* is usually called assimilation by the lay public, but in education, *assimilation* is a technical term referring to the absorption



Americanization of millions of 19th-century immigrant men, women and children began with lessons in speaking, reading and writing English. (Library of Congress)

of knowledge.) Americanization was first envisioned by a handful of particularly idealistic and outspoken founders of the American republic. Among them were BENJAMIN RUSH, THOMAS PAINE, BENJAMIN FRANKLIN, John and John Quincy Adams, JAMES MADISON, NOAH WEBSTER and TIMOTHY DWIGHT.

Eager to overthrow the monarchic roots of the colonial social order, they planned to establish a uniform federal education system that would shape a new, republican and uniquely American character, based on a common new

American language, American history, American laws, literature and art and dedicated to creating a new American culture. But their vision of Americanization also included a common Christian Protestant religion and individual liberty for all. Other Americans had far different visions. The southern vision included slavery as integral to both the economy and Christianity. And most American men, both northern and southern, regarded women and children as chattel, again, with ample justification from the Scriptures. In addition, there

were few Americans in the North or South who welcomed replacing the centralized controls of the British monarchy they had just shed in the Revolution with a new federal board of education that would dictate how and what they must teach their children.

The War of 1812 reunited Americans against a common foe. The Protestant evangelical (see *EVANGELISM*) and the *AMERICAN LYCEUM* movements of the 1820s and 1830s furthered the process of Americanization by attempting to spread a common religion and a common approach to education across the nation. The Americanization movement suffered a setback when secularists such as *HORACE MANN* fought for disestablishment in states that had retained official religions, but the public school movement of the 1840s and 1850s, also led by Mann, restored the process by providing a common curriculum.

The Civil War all but reversed the process, and the peace that followed did little to revitalize it. In the South, *de jure* racial segregation of schools blocked Americanization of blacks for almost a century. In the West, Native Americans were herded onto reservations. In the North and East, hundreds of thousands of foreign immigrants jammed their way into American cities, where they settled in rigidly segregated ethnic ghettos, some voluntarily for the comfort of a familiar language, others, such as the Chinese, forced to live apart by their European predecessors.

At the end of the 19th century, an expanded public school system and a host of *SOCIAL SETTLEMENTS* set about trying to Americanize new arrivals, and social reformers coined the term “melting pot” to describe the assimilative process they hoped to inaugurate. Success was limited because only about 10% of American children went beyond sixth grade. Despite the hopes of social reformers and a few inspiring tales to the contrary, the vast majority of immigrant children at the turn of the century began

full-time work in factories, mines and farms at the age of five or six and spent the remainder of their lives in ethnic ghettos. There, they continued to speak the languages of the lands from which they had come and re-created as much as possible the culture of their countries. Even those who emerged from ghettos found life in the middle and upper classes rigidly segregated by religion and ethnicity. Jews, Catholics, Italians, Irish and other ethnic and religious minorities were routinely barred from many neighborhoods and towns, from many private schools and universities and from many companies and even entire industries. To compensate, members of such groups founded their own ethnocentric businesses, social clubs, living and recreation areas and even their own educational institutions. Moreover, not all the new arrivals to the United States sought assimilation—certainly not in the religious sense. The Catholic Church built the largest system of private schools in the United States to prevent religious assimilation of its members with the dominant Protestants. Jewish communities also built their own schools, and even among Protestants, the various sects vied to prevent assimilation of their memberships into a new common American Protestantism.

Blacks, meanwhile, remained totally segregated, in many states by law, by custom in the others. They lived in black neighborhoods, attended black churches, went to black schools and colleges, and held usually servile, uniquely black jobs. Although blacks were again excluded, World War I threw a generation of heterogeneous enlisted white men and draftees into the culturally homogenizing military machine. The Great Depression of the 1930s Americanized still more citizens by throwing them together into huge government-sponsored work and welfare projects. And when two generations of G.I.s marched home from the Second World War, dressed alike, talking alike and indeed looking alike, it appeared that the founding

fathers' vision of a single, uniquely American character had been achieved—especially when the G.I. BILL OF RIGHTS allowed tens of thousands of veterans of diverse backgrounds to attend colleges and universities together. But even G.I.s, who had assimilated on foreign battlefields and in colleges and universities after the war, were apt to encounter racial, religious and ethnic discrimination and segregation in housing, education, jobs and virtually every other area of American life. Once again, blacks did not participate in the process, and sociologists began to describe “two nations” in the United States, with two distinct cultures as well as skin colors. In 1946–47, 17 states (Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, Missouri, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia and West Virginia), as well as the District of Columbia, had laws that segregated blacks and whites in all public facilities, including schools. Only 12 states had laws banning segregation. The landmark U.S. Supreme Court decision in the 1954 *BROWN V. BOARD OF EDUCATION OF TOPEKA*, however, seemed to set the nation on an inevitable path toward total Americanization. Not only did the Court declare segregation of the races illegal, it opened the door for similar lawsuits by other minority groups and forced passage of state and federal laws banning segregation and discrimination in housing, education, work and almost every other area of American life. For the first time in American history, complete Americanization—the assimilation and integration of all Americans, regardless of origin, into a single, unique new race—became at least legally possible.

Instead of seizing the opportunity they had fought so long and hard to obtain, however, Americans refused to give up their individual identities by abandoning their ethnoreligious traditions. Native Americans, Amish, Orthodox Jews, Blacks, Hispanics and many other ethnic

and religious groups openly resisted efforts by educators to assimilate them into an all-inclusive American culture. Blacks demanded courses in black studies (see AFRICAN-AMERICAN STUDIES); Orthodox Jews and Amish refused to attend public schools in many areas; Hispanics demanded BILINGUAL EDUCATION; and virtually every other ethnoreligious group demanded some degree of adaptation of the American curriculum to include instruction in their own cultures. By the early 1980s, sociologists had abandoned the term *melting pot* to describe American society, favoring instead the metaphor of an “American mosaic” made up of hundreds of distinct and dissimilar ethnoreligious minorities held together by a common cement. Later in the decade, a new, more accurate metaphor—“kaleidoscope”—prevailed, taking into account the overlapping of the different cultures in American society. Instead of ASSIMILATION, educators now talked of affiliation as the basic goal of the Americanization process.

In the 1990s, however, even the kaleidoscope concept began to fracture somewhat as an avalanche of illegal and legal immigrants thronged across U.S. borders. By 2006, the U.S. Office of Immigration estimated the number of illegal immigrants in the United States at more than 11 million, including about one million school-age children. In 2005 alone, an additional 1 million illegal immigrants were arrested and sent back across the Mexican border. About 60% of the illegals who successfully gained entry into the United States had crowded into four states—California (2.2 million), Texas (1 million), New York (500,000), and Illinois (450,000). Under a 1982 Supreme Court ruling in *PLYLER V. DOE*, all children in the United States are entitled to free elementary and secondary school education, regardless of immigration status. By 2000, the states were spending a total of about \$3.5 billion a year to educate non-English-speaking children, which included

legal as well as illegal immigrants. Since *Plyler*, eight states, including Texas, New York and Illinois, have extended in-state college-tuition benefits to illegal immigrants who attended high school in the state for at least three years and pledged to legalize their status by seeking permanent residency. Although 21 other states and Congress have considered similar laws, few immigrants have taken advantage of them. Most illegal immigrants are unaware of the laws, and even those who do know are, for the most part, academically unprepared for college. The few that are qualified to attend college can seldom afford even the reduced, in-state college tuition, and federal law bars illegal immigrants from receiving federal student loans and grants or participating in work-study programs. Although California, the state with the most illegal immigrants, passed a law allowing illegal immigrants to attend state colleges and pay reduced, in-state tuition rates, a group of out-of-state students sued the University of California, charging that the policy discriminates against American citizens by forcing them to pay higher tuition than students who are in the United States illegally.

Unlike immigrants of previous generations, only about one-third of new arrivals have applied for citizenship in recent decades. Estimated at nearly 20 million, the new alien population is believed to have resisted Americanization because of the ease with which air travel and efficient long-distance telephone service allow them to maintain ties to families and cultures in their native lands. Indeed, of the more than 33 million foreign-born people living in the United States in 2002, only about 13.5 million, or 41%, had become citizens. And unlike previous immigrant groups, the new immigrants have created subcultures that have remained unattached to the larger American society for as many as three generations.

Depending on their ages, between 10% and 20% of arriving immigrants are illiterate.

Twelve percent have no schooling. In contrast, most immigrants arriving in the United States 30 years earlier were Europeans with two years more schooling than the average American. By 1999, nearly one in five children born in the United States had at least one foreign-born parent. The number of children who spoke a language other than English at home made up 5% of all school-age children, as did the number of children who had difficulty speaking English. Two-thirds of all immigrants arrived from Latin America, and 40% found themselves in the lowest 20% in terms of income in the United States, and had two years fewer schooling than the average native-born American. To combat the resistance to assimilation by new immigrants, California and Arizona have, in effect, banned BILINGUAL EDUCATION in state public schools. In its place, schools have introduced new programs of at least one year of intensive instruction in English, to promote assimilation.

American Journal of Education A periodical edited by education pioneer HENRY BARNARD over a 27-year span from 1855 to 1881, it was the world's most important education periodical of its day, read by scholars everywhere. It eventually grew to 32 huge volumes of more than 800 pages each and remains the most important published 19th-century work in the field. Like many other journals of education of the era, Barnard's *American Journal* helped promote the public school movement and kept teaching professionals informed of new developments and techniques in their field. It contained many articles written by Barnard as well as by other leading educators, both American and European. It also provided a forum for school reformers who used its pages to share the political techniques they had used to coax the public and state legislatures to establish public school systems and expand educational opportunities for women. The journal also contained technical and professional informa-

tion for teachers, including pedagogical techniques and sample lessons and methods of teaching various subjects.

American Library Association The oldest and largest organization of professional librarians in the world. Founded in 1876 by about one hundred scholars, its early years were inextricably tied to that of MELVIL DEWEY. Although not a founder, the 25-year-old Dewey was everywhere to be seen at the initial, formative meetings. His goal was twofold: to convince the gathering librarians to adopt the new book cataloguing and classification system he had developed, and to adopt as their official publication the *Library Journal* that he and editor-publisher R. R. Bowker had founded. He succeeded in both tasks and became the association's first secretary.

With or without Dewey, the librarians would have formed their much-needed association. At the time, the number of libraries in America with more than 300 books in their collections had exploded to more than 3,500. Untold thousands of Americans who had not attended schools depended on library books for their education and entertainment. Librarians were, however, divided on the proper role of a library. Some saw libraries as repositories to preserve books for posterity and, therefore, to protect them from destructive handling by the public. Others saw libraries as educative institutions, whose role was to disseminate knowledge as widely as possible by distributing books into the greatest number of hands. Dewey influenced the new association to embrace the second position and adopt as its motto, "The best reading for the largest numbers at the least cost." By the mid-1920s, the association had become a force in making American libraries as central to the education of the citizenry as the public school system.

The ALA's tens of thousands of current members include librarians, library trustees

and others involved in librarianship. Among its primary functions are the accreditation of library education programs; promotion of government support for libraries; publication of the monthly *American Libraries* news magazine and of *Booklist* and *Choice*, two book guides to help public, school, college and research librarians select books and media; and the awarding of the annual Caldecott and Newberry medals for outstanding children's books. The association also promotes intellectual freedom through its Freedom to Read Foundation, the Intellectual Freedom Committee and the Office for Intellectual Freedom. The explosive growth of the ALA has forced it to apportion its functions among 11 semiautonomous divisions serving or dealing with, respectively, library trustees, library administrators and managers, college and research libraries, public libraries, school libraries, specialized libraries, children's library services, young adult services, reference and adult services, library technology, and resources and technical services.

American Lyceum The largest, best and most influential of the voluntary educational institutions that sprang up in towns and cities across America in the first half of the 19th century. The lyceum was founded in 1826 by Josiah Holbrook, a wealthy farmer-scientist who had attended Yale and emerged a fervent social and educational reformer. Inspired by Scotland's Andersonian Institution and similar organizations in England, Holbrook founded a network of self-help associations with two goals: to provide young men and the community in general with an inexpensive, practical education that would teach them various skills and crafts; and to bring higher education—especially science and technology—to the general public to help improve their lives.

Holbrook founded the first lyceum in Millbury, Massachusetts, where he delivered a series of lectures on the natural sciences. He then

organized his listeners—farmers, mechanics and others—to organize a self-help organization in which they shared skills, knowledge and other talents that improved the lot of all members. The Millbury Lyceum No. 1, Branch of the American Lyceum proved startlingly successful, and Holbrook set out as a missionary for his new educational movement. Within months, he had organized dozens of village lycea and county lycea, each with a local “board of mutual education,” which collected one dollar a year from each member.

The movement spread southward into Connecticut and other states, and by 1829 to every region of the United States. It became the most powerful new educative force in America at a time when Americans were hungry for skills and knowledge that would ensure their success in life. Public schools had yet to be established in most communities, and most ordinary Americans either could not afford or did not want to go to church-operated schools, which provided the only source of formal education. The movement was, in effect, America’s first secular public school system, and, more significant, its first public vocational school system.

The complexion of each lyceum varied from town to town, state to state and region to region, depending on member needs. It operated as a citizen democracy, providing varying degrees of education, culture, vocational training and entertainment and imbuing every community with heightened interest in education, libraries and intellectual pursuits generally. The Apprentices’ Literary Association in New Haven, Connecticut, was made up of workingmen. The Kennebunk, Maine, lyceum was largely a middle-class reading club and debating society. Cities such as New York and Chicago had various types of lycea—some for a general audience of young men, others for mechanics, still others for literary types. Initially, they drew on their own memberships for lecturers. The Concord, Massachusetts, lyceum, which was prob-

ably the most intellectually elevated in the nation, sponsored 14 concerts, 105 debates and 784 lectures during its first few years. More than 300 lectures were given by the area’s gifted residents, including Ralph Waldo Emerson, who gave 98 lectures, and Henry David Thoreau, who delivered 19. Many lycea created libraries, others provided the foundations for local schools and still others sponsored publications. Some evolved into important societies, associations and institutes for specific occupational groups, such as farmers, mechanics or teachers, while others became professional institutes to upgrade and provide mutual education for doctors, lawyers and engineers. The Franklin Institute in Philadelphia founded a high school, and Chicago’s Union Agricultural Society published the *Prairie Farmer*.

The voluntary self-help societies based on mutual help became one of the most important movements in the history of American education and may well have been responsible for halting the takeover of education by the church and opening the way for public acceptance of secular, public school education. The movement peaked in the late 1830s, then slowly began to fade in the years before the Civil War as public schools and then libraries sprouted across the nation and replaced lycea as primary providers of education.

American Missionary Association One of the many white, northern religious organizations that founded mission schools throughout the South to educate former slaves in the decades after the Civil War. A Congregationalist organization, the American Missionary Association insisted on keeping white faculties and white principals and presidents well into the 20th century at its all-black southern schools and colleges. This did not change until most were drafted during World War II and could only be replaced with blacks. When former (white) faculty and administrators attempted

to return, they were turned away amidst a barrage of criticism for having purposely undereducated their black students. Because of lack of adequate records, the quality of education under prewar white and postwar black administrations and faculty has never been compared.

(See also AFRICAN-AMERICAN EDUCATION.)

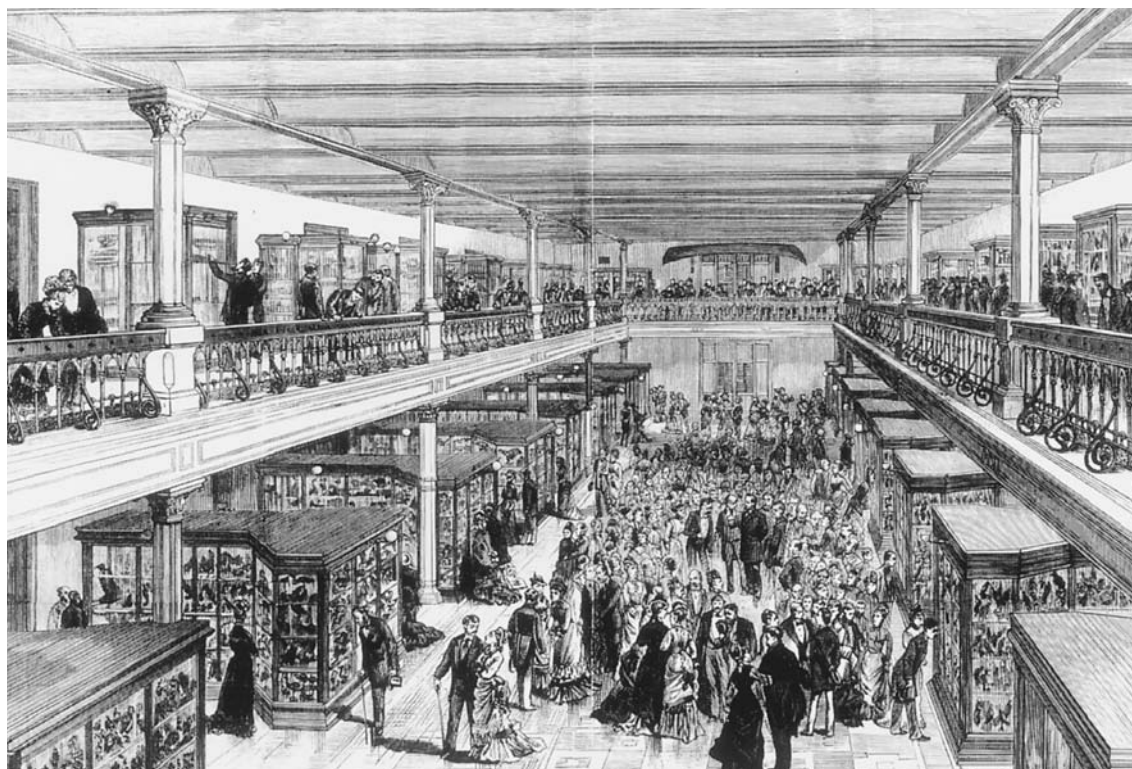
American Museum of Natural History

One of four great American museums whose founding after the Civil War marked a new era in the development of museums as public, educative institutions.

Opened in 1877, the American Museum of Natural History, along with the Art Institute of Chicago, the METROPOLITAN MUSEUM OF ART and the BOSTON MUSEUM OF FINE ARTS, was one of

the first great American museums founded as a nonprofit educational and cultural institution for the general public by a group of civic-minded wealthy benefactors, acting on behalf of the city government. The four museums represented a new concept in extracurricular American education, and they replaced the earlier profit-making museums such as PEALE'S NEW YORK MUSEUM and BARNUM'S AMERICAN MUSEUM, which had previously served that purpose.

Unlike many museums that concentrated on collecting, research and preservation, the American Museum of Natural History made public education its top priority from its inception. In addition to its exhibit halls and library, the museum publishes instructional literature, shows instructional films and conducts classes



President Hayes participating in the opening ceremonies of the Museum of Natural History, in New York City, December 22, 1877 (*Museum of Natural History*)

and offers lectures for school children, college students and the general public in its classrooms and auditoria.

Its role as an educative institution has not been at the expense of research, however, and it conducts important, original research in its extensive laboratories and sponsors scientific expeditions around the world. Not all of the latter have been free of controversy, however. In 1896, the museum's anthropologist Franz Boaz asked explorer Robert E. Peary to bring Eskimos back from Greenland to be studied at the museum. He brought back six—three men, two women and a boy—and exhibited them aboard his ship to paying customers before turning them over to be housed at the museum. With no natural immunities, all but the boy died of tuberculosis, and their bones were kept at the museum for nearly a century, before being returned to Greenland for burial in 1993.

Now maintained jointly by government and private contributions, the museum has an endowment of more than \$200 million and attracts about 3.6 million visitors a year. It maintains a collection of more than 36 million artifacts in halls of geology, minerals and gems, paleontology, forestry and conservation, invertebrates, insects, fishes, reptiles, birds, mammals, anthropology, biology and astronomy. The museum publishes the authoritative monthly magazine *Natural History*.

American Philosophical Society One of two competing societies made up of America's founding fathers and leading intellectuals. Founded in Philadelphia, in 1743 by BENJAMIN FRANKLIN, probably in conjunction with John Bartram, a farmer and botanist, the society was originally established as a scientific academy for "ingenious and curious men." At the approach of the American Revolution, it turned its attention to the diffusion of knowledge and the development of a system of public education for the new republic.

Like its competitor, the AMERICAN ACADEMY OF ARTS AND SCIENCES, the American Philosophical Society favored and worked for establishment of a national system of public education as essential to the ultimate success of democracy. Where the society differed from the academy was not over the question of a national education system but over the kind of knowledge the system would teach. The academy, supported by John Adams and his son John Quincy Adams, favored a classical curriculum, based on Latin, Greek, literature and philosophy. Benjamin Franklin and THOMAS JEFFERSON, who succeeded Franklin as president of the American Philosophical Society, favored the study of more practical courses such as natural science and natural history.

In 1795, the society held an essay contest calling for proposals for a national "system of liberal education and literary instruction . . . best calculated to promote the general welfare of the United States:—comprehending also, a plan for instituting and conducting public schools in this country. . . ." The proposal the society eventually espoused was "a uniform system of national education" made up of local parish schools, county academies, state colleges and a national university, with identical standards, curriculum and textbooks, under the direction of a central board of national education. Sectional differences in the 1830s eventually destroyed plans for implementing this and all other proposals for a national education system.

The American Philosophical Society is still located in Philadelphia and remains an honorary society, with members elected for their scholarly accomplishments in all fields of learning.

(See also EDUCATION; MADISON, JAMES; RUSH, BENJAMIN; WEBSTER, NOAH.)

American Samoa An unincorporated territory of the United States in the South Pacific

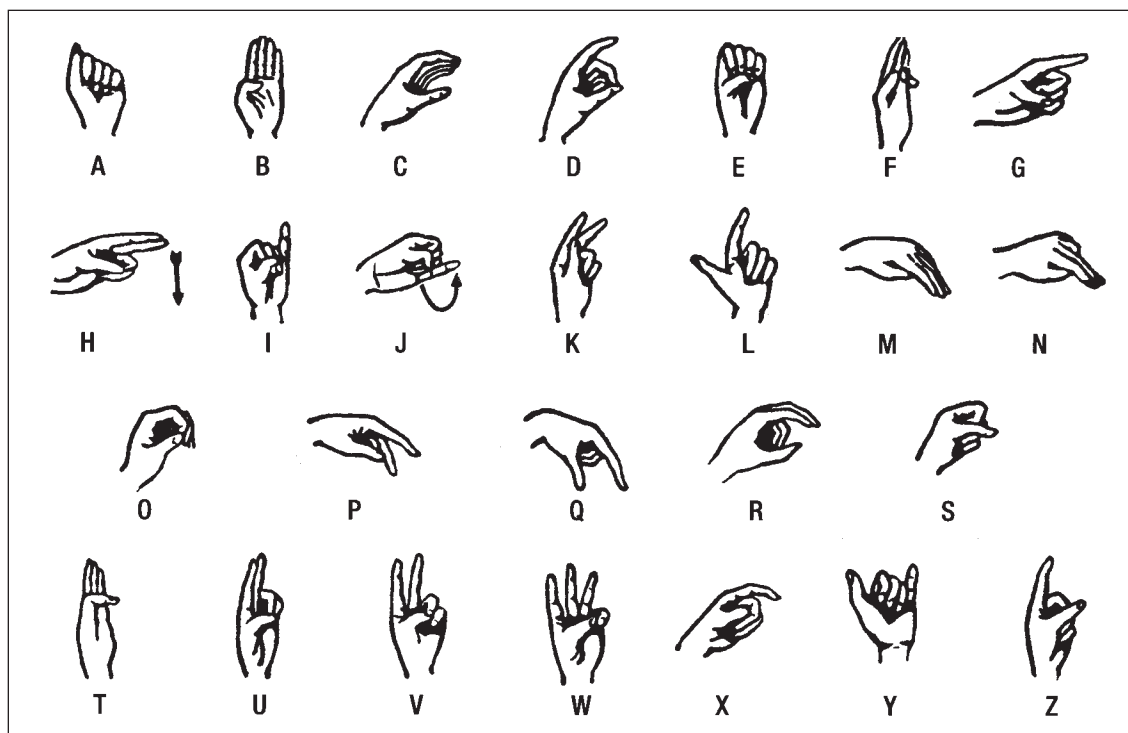
Ocean, acquired by treaty with Germany and England in 1899. Consisting of seven islands, of which six are inhabited by a population of more than 57,000, American Samoa has free, compulsory education for all children between the ages of 6 and 18. There are 30 public and 6 private schools, 160 primary village schools with a total enrollment of nearly 16,000 students and a community college with just over 1,200 students. Because of a chronic lack of education and job opportunities on the islands, the vast majority of Samoans have traditionally emigrated to Hawaii and California, where, together, they outnumber the population of Samoa.

American Sign Language (Ameslan) A language of the severely deaf that uses specific

finger, hand and wrist positions to signal letters, sounds, syllables and words. Considered by many to be a true language, Ameslan has its own grammatical rules and sentence structures and is not a word-for-word translation of English. The signed version of the English-language sentence "People label me as disabled" would, if translated literally, read, "Disabled, people label me, wrong."

(See also DEAFNESS.)

American Society Held in Philadelphia for Promoting and Propagating Useful Knowledge A clublike association formed in 1727 by Benjamin Franklin and nine other intellectuals to discuss "morals, politics or natural philosophy" and virtually every other area of human concern. Originally known



The sign language of the deaf

informally as Franklin's junto, it adopted its prodigious formal title in the 1760s as it grew in membership and influence. It had far-reaching influence in producing social reforms and legislation in Philadelphia and Pennsylvania. Franklin later merged it into the AMERICAN PHILOSOPHICAL SOCIETY after he helped found that organization.

American studies A wide-ranging, interdepartmental, college-level curriculum focusing on the history, political science, economics, sociology, science, literature, art, music, religion and culture, and their effects on the American nation and its society. Not all colleges have departments of or offer majors in American studies, and course offerings vary widely from school to school.

(See also AREA STUDIES.)

Americans with Disabilities Act of 1990

A federal law that expanded protection for the disabled with respect to employment opportunities and public services, including all educational facilities that receive federal funds.

(See also BARRIER-FREE CAMPUS.)

American Tract Society One of the many groups formed during the evangelical crusade of the 1820s and 1830s to convert Americans to Christianity. Originally formed in 1828 to publish Bibles and other scriptural literature for missionary societies, the American Tract Society organized huge networks of religious book peddlers who fanned out across the nation, as far west as the Mississippi Valley. In the absence of schools, school teachers and books of almost any kind, the American Tract Society's books served everywhere along the frontier as primary vehicles for learning to read, with the society's salesmen often serving as itinerant teachers.

American universities abroad A group of American colleges and universities either based overseas or operating overseas branch campuses of their U.S. facilities. Among the earliest American universities abroad were freestanding, independent entities founded to accommodate the personnel and children of the American diplomatic corps and American armed services. Founded largely after World War II and unaffiliated with one another, most differ from local universities in that they offer an American-style COLLEGE education. These institutions include the following.

American College of Greece, Athens, was founded in 1875 as the American School for Girls and now has more than 2,100 men and 3,200 women undergraduates—90% of them from Greece. It has no graduate school.

American University in Cairo, Egypt, was founded in 1919 and now has three undergraduate and three graduate schools—the former with more than 2,000 men and 2,250 women, the latter with about 350 men and more than 500 women. Ninety-two percent of students are from Egypt.

American University of Paris, France, was founded in 1962 and counts 700 men and women in its undergraduate school.

American University of Rome, Italy, was founded in 1969 and has about 135 men and 250 women undergraduates—65% of them from Italy. It has no graduate programs.

Franklin College Switzerland, Sorengo (Lugano), Switzerland, was founded in 1969 and now has about 100 men and 150 women undergraduates. It has no graduate programs.

John Cabot University, Rome, Italy, is a school of undergraduate studies founded in 1972. It now has about 200 men and 250 women.

Richmond, the American International University in London, Richmond, Surrey, England, was established in 1972 and has about 550 each of men and women undergraduates and about 50 men and 50 women in graduate program. The school also offers associate degrees.

American University—Central Asia, Bishkek, Kyrgyz Republic, was founded in 1994 and has

1,200 undergraduates, almost evenly divided between men and women, and 50 graduate students in business administration. About three-quarters of the students are Kyrgyz, and the remainder are largely from other Central Asian countries.

Other independent American universities are in Afghanistan (Kabul), Bulgaria (Blagoevrad), Lebanon (Beirut) and Sharjah, one of the seven autonomous emirates that make up the United Arab Emirates on the Persian Gulf adjacent to Saudi Arabia.

In addition to the independent American universities, however, are several dozen branch campuses of United States-based colleges and universities. Overseas operations range from freestanding campuses offering complete undergraduate and graduate degree programs to single-department offerings, such as business administration or American law, in existing foreign universities. State University of New York at Buffalo, for example, operates a branch campus in Singapore for 250 students enrolled in bachelor's and master's programs in business and communications. Although some American colleges have long maintained overseas study programs for American students of foreign languages or European art, for example, the new foreign-study programs are designed primarily for foreign students—often in response to tough new visa requirements for foreign students who seek to study in the United States. Expansion of international trade has made it essential for more and more foreign students to obtain the practical type of education in English offered by undergraduate and graduate business programs of American colleges and universities. Most foreign students come from wealthy families who gladly pay whatever the American colleges charge. Foreign students with degrees from both their home institutions and the branch campuses of American or other English-speaking institutions of higher education can usually enhance their

future earnings dramatically. The result has been a surge in demand for English-language institutions to expand overseas. Almost 40 Australian universities have opened overseas campuses, and British and Canadian institutions have followed suit. China alone has attracted 17 American colleges, Singapore six, and India and Qatar five each. Indeed, tiny oil-rich Qatar on the Persian Gulf has established a higher-education center, Education City, where the emirate royal family is spending more than \$1 billion to set up branch campuses of Weill Cornell Medical College, Texas A & M University Engineering School, Carnegie Mellon's business and computer-science programs, and Georgetown University's foreign-service education program. Similarly, the United Arab Emirates have built Knowledge Village, where, as in Qatar, the emirs insist they want no special admissions advantages for their princely heirs.

American institutions with overseas campuses include Boston University (Belgium), Carnegie Mellon University (Australia, Greece, Japan, Qatar, South Korea), Cornell University (Qatar), Florida International University (China), Florida State University (Panama), Fordham University (China), Georgetown University (Qatar), George Mason University (United Arab Emirates), George Washington University (Hong Kong, Singapore), Georgia Institute of Technology (France, Singapore), Massachusetts Institute of Technology (Singapore), Missouri State University (China), Ohio State University (Thailand), Ohio University (China), Pace University (China), Rochester Institute of Technology (Croatia, Czech Republic, Dominican Republic), Roger Williams University (Vietnam), State University of New York (India, Singapore), Stevens Institute of Technology (China), Syracuse University (China), Temple University (Japan), Texas A & M University (Qatar), Troy University (Ecuador, Germany, Hong Kong, India, Malaysia, Sri Lanka, Taiwan,

Thailand, United Arab Emirates, Vietnam), University of Chicago (Britain, Singapore), University of Delaware (Bosnia and Herzegovina), University of Dayton (India), University of Hawaii (Vietnam), University of Indianapolis (Greece), University of Maryland at College Park (China), University of Michigan (China), University of Nevada at Las Vegas (Singapore), University of Texas at Arlington (China), Virginia Commonwealth University (Qatar), and Washington University at St. Louis (China).

In addition to conventional, nonprofit institutions of higher education, companies operating for-profit American colleges and universities have established a presence across the Americas, with DeVry, Inc., Apollo International (PHOENIX UNIVERSITY), Laureate Education, and others operating in Canada, Mexico and nearly a dozen countries in Central and South America and the Caribbean, as well as Europe and Asia.

(See also FOR-PROFIT COLLEGES.)

America 2000 A national strategy proposed by President George H. W. Bush's administration to improve the quality of American public schools and make U.S. pupils "first in the world" by the year 2000. The program was designed by the 14-member bipartisan National Education Goals Panel of governors, appointed by President Bush in response to studies showing that academic skills of American students had declined despite increases in spending on education to more than \$400 billion annually.

Included in America 2000 was a federal legislative package, however, that died in Congress because of partisan disagreements over one of its central features: SCHOOL CHOICE. In addition, America 2000 proposed the first voluntary national academic standards for elementary and secondary school students.

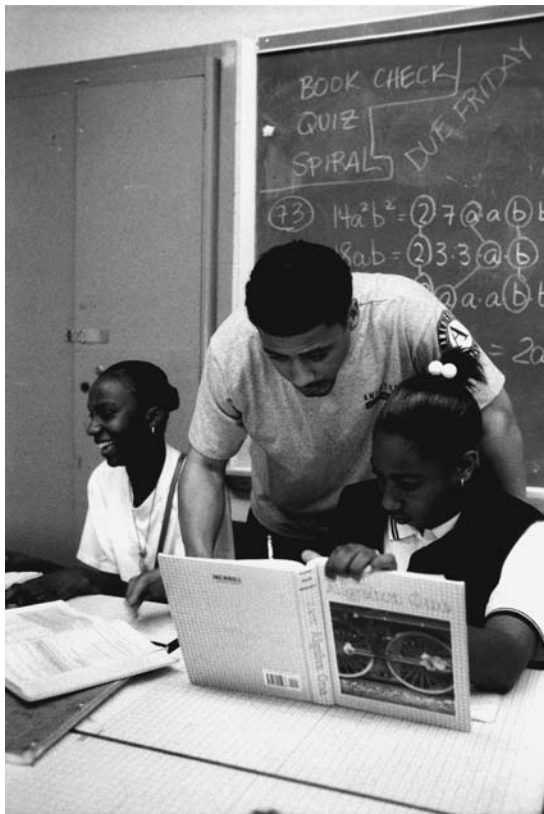
The other goals of the program included:

- Making all incoming kindergartners school-ready;

- Increasing high school graduation rates to 90%, from less than 75%;
- Making American students first in the world in science and mathematical achievement;
- Making all American adults literate and equipping them with marketable job skills;
- Imposing an atmosphere of discipline conducive to learning in all schools and making them free of drugs and violence;
- Ensuring that all fourth, eighth and twelfth graders demonstrated competence in English, math, science, history and geography appropriate to their grade before permitting them to progress to higher grades or to graduate from high school.

The program would have provided federal funds to underwrite state education reforms and upgrade teacher training. It was revived in 1993 by the administration of President Bill Clinton, under the new name of GOALS 2000.

AmeriCorps A national service organization in which volunteers are rewarded with credits of nearly \$5,000 a year toward their college or university education. Established by President Bill Clinton in 1994, AmeriCorps enrolls young men and women to work on problems related to education, public safety, social services and the environment. In exchange for a two-year commitment, participants in the first year of operations were paid \$7,500 a year (minimum wage) and a credit of \$9,450 (\$4,725) a year that could be used for paying for college or graduate school at the end of their government service. Specific jobs included restoring wildlife habitats, conducting childhood immunization programs, escorting children and the elderly through dangerous inner-city neighborhoods, counseling drug abusers, providing preventive health services and improving neglected playgrounds, parks and wetland. Administered by the Corporation for National Service, AmeriCorps enrolled 20,000 in its first year. By 2005, enrollment grew to 70,000.



An AmeriCorps member tutors students in algebra. (Corporation for National and Community Service, Office of Public Affairs)

Amherst College One of America's most academically selective colleges and a pioneer in curriculum reform. Founded in Amherst, Massachusetts, in 1821 by a group headed by NOAH WEBSTER and including Samuel Dickinson (poet Emily Dickinson's grandfather), Amherst began much as ANDOVER THEOLOGICAL SEMINARY did, as a conservative alternative to the liberal Unitarian theological program at Harvard. By 1823, it had changed to a four-year college offering both classical and theological curricula.

In 1827, JACOB ABBOTT, a professor of mathematics and science, led the faculty in urging

reform of the classical curriculum to meet the needs of an expanding nation and a new class of students bound for business, commerce and agriculture rather than the learned professions. The reformers did not suggest abandoning classical education or, indeed, lowering the requirements for admission, namely competence in Greek and Latin. They merely suggested adding a second, nonclassical curriculum that would substitute French and German for Greek and Latin and stress modern history, civil and political law, the natural sciences and the art of teaching. The trustees agreed, but they refused to award a degree for the new curriculum, and after a surge of initial interest, students stopped enrolling in the program. Abandoned in 1829, it nevertheless served as a model for other colleges and, eventually, for Amherst itself after the Civil War.

Since then, Amherst (which is named for the town, not the British colonial officer in the college's official song) has remained a four-year liberal arts college dedicated to teaching undergraduates. It eschewed the post-World War II tendencies of similar colleges to expand into universities and avail themselves of the lucrative research grants available from the federal government. The college has more than 1,600 students taught by a faculty of about 160 men and women, 96% of whom have Ph.D.s. Once an all-men's college, it first admitted women in 1975, and they now constitute about half the student body. Amherst participates in the Five College Consortium with Hampshire College, MOUNT HOLYOKE COLLEGE, Smith College and the University of Massachusetts at Amherst, under which students may cross-register in courses at participating schools and receive credit toward their Amherst degree.

Amidon Plan One of the early BACK-TO-BASICS programs, introduced in the early 1960s in the Amidon Elementary School in Washington, D.C., by Superintendent of Schools Carl F. Hansen.

Hansen imposed strict student discipline and a track system that grouped students according to their abilities and rate of progress. Teachers used DIRECT INSTRUCTION and a rigid, predetermined schedule to teach what he called the “building blocks of intelligent behavior”: Reading, writing, spelling, penmanship, speaking, grammar, mathematics, science, U.S. history, geography, health and physical education, music and art. The program was the target of harsh criticism from many educators, who called it so scholastic and narrow in its educational coverage that it failed to meet the needs of its students. The program had few measurable effects on student performance and was abandoned at the end of Hansen’s incumbency.

analogies test item A commonly used question on standardized tests to measure scholastic aptitude. Such questions ask students to recognize the relationship between two words and demonstrate that recognition by constructing a second, parallel relationship with two other words. Analogous pairs may be based on a variety of relationships, such as opposites, as in black:white::dark:[*light*]; or makeup and composition, as in water:ocean::sand:[*desert*]; etc. Analogies test items, like other questions in standardized tests, may be presented in a variety of forms, including completion questions, true-false questions or multiple-choice questions.

ancient languages In American education, a term referring only to Hebrew, Greek and Latin, which together with the study of classical and biblical literature were required elements of the curriculum for Christian gentlemen in colonial grammar schools, academies and colleges. Hebrew and Greek were the languages of the Bible, and for centuries Latin was the language of the church, which controlled formal education and the great universities in western Europe and conducted classes in Latin.

Knowledge of Latin, Greek and Hebrew remained a requirement for admission to American colleges in the early 1800s, when the study of theology and of the scriptures in their original languages were central to the curriculum. To meet the needs of an expanding nation, however, colleges began broadening their curricula in the 1820s to include a more practical education. Public schools and colleges added such utilitarian courses as English, mathematics, chemistry, botany, physics, biology and zoology, American history and modern languages. The construction of canals and railroads and the discovery of valuable ores also made civil, mechanical and mining engineering essential elements of the curricula at all but a handful of colleges. There was no room or need for Latin, Greek or the rest of the classical curriculum—especially at LAND-GRANT COLLEGES that became the foundations of higher education in the Midwest, South and West.

Hebrew was the first of the ancient languages to be dropped from the classical curriculum at private colleges, although Greek and Latin remained requirements for the entire 19th century. The early 20th century saw Greek gradually disappear from the classical curriculum, but Latin remained a requirement until after World War II. After the war, however, tens of thousands of discharged veterans—mostly public school graduates with no knowledge of Latin and funded by the G.I. BILL OF RIGHTS—poured onto the nation’s college campuses. Rather than risk losing many gifted students, the few colleges that still required it dropped the Latin requirement. For a little more than a decade thereafter Latin remained a requirement for admission to graduate schools of medicine, but they too had to yield to the near impossibility of pursuing Latin studies at public schools and colleges. By the end of the 1990s, student interest in ancient languages had declined dramatically, with only about 16,000 college students studying any ancient Greek and about 25,000

studying one or more courses in Latin. Fewer than 750 of 1,165,000 American college students earned bachelor's degrees in ancient languages; only about 275 students earned master's degrees and fewer than 60 earned doctorates.

Andersonian Institution A system of popular, practical education in Glasgow, Scotland, and probably the model for Josiah Holbrook's AMERICAN LYCEUM. At the heart of the Scottish institution was the museum and library that Professor John Anderson had built and bequeathed to it to provide education for commoners in 1796. In 1800–1801, George Birkbeck, a young professor at the Andersonian, moved to London and founded a similar institution—the London Institute for the Diffusion of Science, Literature, and the Arts. The institute offered lectures on each of those subjects, as well as philosophy, to audiences of mechanics, artisans and other commoners. Groups of mechanics in Glasgow and London were so inspired by their educational experiences that they founded their own mechanics' institutes in both cities.

Sponsored by Birkbeck and HENRY BROUGHAM, a former classmate of his from the University of Glasgow, the new mechanics' institutes and the Andersonian institutions were the forerunners of the British state school system, and it was Brougham's article about the institutes in the *American Journal of Education* that inspired Holbrook to found what he first called the "Universal Lyceum" in the United States.

Andover Theological Seminary One of the first and most distinguished of the theological seminaries in the American colonies. It was founded in 1808 by Congregationalist conservatives who rebelled against the growing Unitarian influence at HARVARD COLLEGE, which was the former training ground for Congregational ministers. Andover was one of about 10 schools of theology of various denominations

that opened in the United States after the Revolutionary War to accommodate the growing number of Christian sects that immigrants were bringing to the young nation. The Dutch Reformed opened their first school of theology in 1784. The Roman Catholics followed suit in 1797, the Presbyterians in 1812, the Lutherans in 1815, the Episcopalians in 1819, the Baptists in 1820, the German Reformed in 1825 and the Methodists in 1839.

Instead of founding their own seminary, however, the UNITARIANS simply took over the theology department at Harvard College, thus forcing the more conservative Congregationalists to establish their own, new seminary at Andover, Massachusetts. Andover required applicants to have a baccalaureate degree from a liberal arts college and then examined them in Latin, Greek and Hebrew. Students came from such colleges as AMHERST, Williams and DARTMOUTH to study for three years under distinguished scholars such as Ralph Waldo Emerson. Among Andover's most distinguished graduates was author-educator JACOB ABBOTT.

andragogy The art and science of teaching adults, as opposed to PEDAGOGY, the art and science of teaching children. Adults generally enter the classroom voluntarily and are, therefore, readier and more motivated to learn, more self-directed, less dependent on others and more goal oriented. Goals vary widely, but are usually specific and near-term, such as acquiring skills for a higher-paying job.

anecdotal record A teacher's accumulated written descriptions of student behavior. Akin to a ship's log, anecdotal records detail everything the student did or said in specific situations deemed important by the teacher. The dated records should give the background of each incident and the setting (classroom, playground or extracurricular activity). Anecdotal

records also include summaries of all teacher-student and teacher-parent conferences.

Anecdotal records describe each student's day-to-day behavior patterns, interests, attitudes and strengths, as well as problems. Although anecdotal records can often be helpful to counselors and school psychologists dealing with troubled students, their subjective nature and the possibility of teacher bias can have harsh consequences for some children. Biased records, for example, can affect the chances of success for students applying to academically selective private schools or for high school students applying for jobs or for admission to college. To prevent misuse of anecdotal records, Congress passed the Family Educational Rights and Privacy Act as part of the Educational Amendments of 1974. Named after Sen. James Buckley (R, N.Y.) the Buckley amendment gives parents the right to see all confidential school records and challenge any anecdotal records or other data they deem unfair or inaccurate.

Annapolis The popular name for the United States Naval Academy, which is located at Annapolis, Maryland. See UNITED STATES NAVAL ACADEMY.

Annenberg Foundation A charitable foundation established in 1989 by publishing-broadcasting magnate Walter H. Annenberg to underwrite a variety of educational projects. Within four years of its founding, the organization had contributed more than \$1 billion to public and private education, including the largest single gift to public education in American history—a \$500 million “challenge” gift that generated \$566 million in matching grants from public and private sources for 18 school reform projects across the United States. The COALITION OF ESSENTIAL SCHOOLS and the New American Schools Development Corporation each received \$50 million grants, for example.

In turn, such groups used the funds to establish new types of public schools. In New York City, for example, advocacy groups used more than \$60 million in Annenberg Foundation funds to establish 50 small experimental schools to serve about 50,000 students who were transferred from large, overcrowded schools. Research at the time had indicated that students perform better academically in smaller schools than in large ones. Another \$25 million in New York was spent on school improvement projects, including support for the arts and music.

Similar grants went to school districts in Philadelphia, Detroit, Chicago and Los Angeles. In Philadelphia, \$50 million were used to divide 22 high schools, 65 middle schools and 100 large elementary schools into separate, independent “SCHOOLS-WITHIN-A-SCHOOL” of 400 to 500 students each.

Although urban education received the vast majority of the funds earmarked for public education, other grants were made for improving arts education, for improving rural education and for developing an electronic reference library that was to be made available to every high school in the United States.

Other major educational grants made by the Annenberg Foundation during its early years were \$120 million each to the University of Pennsylvania and University of Southern California; \$100 million to the Peddie School, a private boarding and day school in Hightstown, N.J., that Annenberg attended as a boy; \$50 million to the United Negro College Fund; and \$25 million each to Harvard University, Northwestern University and the Williamsburg, Va., Foundation Education Center.

Born in 1908, Annenberg founded *TV Guide* after the birth of the television industry and built it into one of the most widely circulated publications in the United States. He also owned such publications as *Seventeen* magazine and *The Racing Form*; in 1988, he sold his

magazine holdings for \$3 billion. Annenberg also underwrote the founding of the Annenberg School of Communications at the University of Pennsylvania in Philadelphia.

anomia (dysnomia) A learning disorder characterized by a consistent inability to recall names of common, well-known objects or persons.

antievolution legislation A succession of laws, usually enacted in southern states, that make it illegal to teach the theory of evolution. An outgrowth of the rebirth of Christian fundamentalism after World War I, antievolution legislation was introduced in six states. Kentucky, North Carolina and Texas narrowly rejected the new laws in 1921 and 1922. In 1923, however, Oklahoma banned from public schools any books containing the Darwinian theory and Florida made it "improper and subversive" to teach atheism, agnosticism, Darwinism or any other theory of evolution that tied man's origins to other forms of life. Two years later, Tennessee made it a crime for teachers in public schools or universities "to teach any theory that denies the story of the Divine Creation of man as taught in the Bible and to teach instead that man has descended from a lower order of animals."

To test the constitutionality of the law, the American Civil Liberties Union in New York found high school science teacher John Thomas Scopes, in Dayton, Tennessee, to agree to violate the law and face prosecution in what became the world-famous Scopes monkey trial. Although Scopes was found guilty, the public humiliation of those believing in literal interpretation of the biblical origins of man and Earth brought a temporary end to efforts to enact antievolution legislation.

Although Christian fundamentalism experienced another national revival after World War II, the new generation of fundamentalists

were schooled enough in constitutional law not to try to ban the teaching of evolution. Instead, they sought to introduce "creation science" as a part of the public school science curriculum. In 1987, however, the U.S. Supreme Court, ruling in the case of *EDWARDS V. AGUIL-LARD*, in effect declared the teaching of creation science in public schools unconstitutional. The Court said that creation science represented a specific religious belief and was contrary to accepted scientific theories. It held that a Louisiana law forcing students of evolution to study creation science violated the First Amendment of the Constitution, mandating complete separation of church and state. Despite the Louisiana decision, many states have continued to introduce laws mandating the teaching of creation science. Although each effort has been condemned by teachers and eventually overruled by federal courts, the efforts continue. The most recent of these have included state education board rulings ordering a more "balanced" approach to instruction about the origins of mankind. Although it reversed its decision in 2001, the Kansas Board of Education ordered schools to delete all mention of evolution in science curricula in 1999. Kentucky ordered schools to delete the word "evolution" in favor of the phrase "change over time," and Oklahoma officials ordered all science textbooks to carry a disclaimer about the certainty of evolution. In addition to officially mandated changes in the curriculum, a growing number of teachers committed to "the inerrant word of God" organized so-called creation clubs in several hundred public schools across the nation. Although public ridicule forced the boards of education in Kansas, Kentucky, Oklahoma and other states to rescind orders banning the teaching of evolution, the emergence of a repackaged form of creationism called INTELLIGENT DESIGN again placed the teaching of evolution in jeopardy in many areas. In 2005, the Kansas Board of Education mandated the

introduction of intelligent design in the state's public school science curriculum. A theory that an as-yet-unidentified guiding force directed the development of living organisms, including humans, intelligent design was developed as an alternative to Charles Darwin's theory of evolution and claims that living organisms are too complex to have evolved from common ancestors through natural selection and random mutation. Underlying the argument for intelligent design is the concept of "irreducible complexity," which holds that the interdependent parts of most organisms make it impossible for them to have existed in any other earlier, more primitive form. Unlike CREATION SCIENCE, or creationism, the theory of intelligent design carefully avoids all references to religious beliefs, which, by injunction of the United States Supreme Court, the public schools are prohibited from teaching or disseminating. Nonetheless, a Federal District Court in Harrisburg, Pennsylvania, ruled in late 2005 that intelligent design was as much a religious viewpoint as creationism and that public schools injecting it into the science curriculum were in violation of the First Amendment of the Constitution. Early in 2006, the Ohio Board of Education responded to the court decision by reversing a previous order that 10th grade biology classes include a critical analysis of evolution. Later in 2006, Kansas voters ousted the conservative majority on the state Board of Education and installed a new, moderate board that pledged to restore a traditional science curriculum that does away with all mention of intelligent design and restores straight-forward teaching of evolution.

Across the nation, the teaching community had been rather slow to react to the intrusion of religious zealots into education, but the National Center for Science Education, with 4,000 members, finally began staging a continuing series of seminars to prepare teachers to lead their communities in defending evolu-

tion theory as essential to proper grounding in science education. New Mexico's Board of Education responded by barring creationism from the public school science curriculum and endorsing the teaching of evolution theory.

(See also *KITZMULLER V. DOVER AREA SCHOOL DISTRICT*.)

Antioch College The first completely non-sectarian, coeducational college and the first to integrate off-campus work and practical education with academic classroom education. Founded in 1852, Antioch moved immediately to the forefront of education because of its innovative first president, educational visionary HORACE MANN. Mann replaced the traditionally adversarial teacher-student relationship with close student-faculty ties. He abolished the system of grade competition, put students on their honor and made Antioch the first college to integrate females into the faculty as well as the student body. One thousand applicants



The original main entrance to Antioch College, Antioch, Ohio (*Antiochana Collection, Antioch College*)

applied to enroll in the first class, which only had space for six students—four men and two women.

Named after one of the early centers of Christianity in ancient Syria, Antioch remained an innovative institution in the 20th century as well. In 1920, President Arthur Morgan introduced the first cooperative education program in which liberal arts college students alternated classroom study with off-campus work assignments. Designed to educate the “whole” student, Morgan’s required WORK-STUDY program sought to establish strong ties between local industries and the academic community.

In 1978, Antioch became a university. Still an innovator, it continues to require five co-op jobs for graduation, each lasting 16 weeks. The college is part of a consortium that permits cross-registration with 17 other institutions of higher education in Ohio, and it has an extensive study-abroad program in 15 countries. Of the college’s 570 students, about 350 are women.

anti-Semitism The hatred of Jews. With its roots tied to the death of Christ, anti-Semitism pervaded the American educational structure until the passage of the federal CIVIL RIGHTS ACT OF 1964 outlawing discrimination on the basis of race, color, religion, sex and national origin. Although passed ostensibly to redress the grievances of black Americans, the act effectively ended overtly discriminatory policies that blocked or limited the admission of Jewish and all other minority students and the hiring of Jewish and other minority faculty at thousands of private and public institutions. Prior to its passage, academically prestigious independent private schools and colleges had, since their beginnings, restricted or barred admission of Jewish students. In July 1934, for example, the Dartmouth College dean of freshmen and director of admissions proclaimed that he was “grieved beyond words” by the “Jewish prob-

lem” and pledged to limit the number of Jewish students to no more than 5% or 6% of the incoming freshmen class. As late as 1945, Dartmouth president Ernest M. Hopkins admitted turning down Jewish applicants simply because they were Jewish, adding, “Dartmouth is a Christian College founded for the Christianization of its students.” His words, in effect, pinpointed the origins of institutional discrimination against Jews in higher education. Most of the colleges had started as Christian Protestant schools of theology to train ministers for the church, and almost all of the private elementary and secondary schools had been founded by Christian ministers and run as offshoots of Christian churches. Even after they expanded their curricula to include an education in the arts and sciences, most retained a Christian bias. As they trained the first generations of teachers and professors to found and staff public schools and colleges across the nation in the 19th century, those biases permeated public institutions.

Evidence of anti-Semitism, as well as other religious, racist and sexist biases, continues to be seen in occasional student slurs and graffiti, but thousands of schools and colleges—many of which once openly barred Jews from their faculties and student bodies—have introduced Holocaust studies and other programs designed to foster closer ties and understanding among all students.

antistrike laws In education, those state laws that bar striking by public employees such as teachers, administrators and staff at state-run elementary and secondary schools and colleges and universities. Most simply make such strikes illegal and provide for fines, imprisonment or both for strikers and union leaders and fines for the union. Those without outright bans give government the right to obtain relief from such strikes by court injunctions that force workers back to their jobs

while their representatives engage in collective bargaining with management and impartial mediators. A strike or refusal to bargain under such laws allows the court to impose jail sentences and fines for contempt of court. Despite antistrike laws and the harsh penalties for violating them, teachers almost always strike some school system somewhere in the United States each autumn—usually over salaries. Some teachers are almost always imprisoned as a result.

The National Education Association, with 2.2 million members, and the American Federation of Teachers, with nearly 1 million, together represent almost all public school teachers in collective bargaining in the United States. Both maintain defense funds to provide striking and imprisoned teachers with legal assistance.

aphasia An inability to understand words and say them. Usually caused by neurological damage, aphasia may be limited to the inability to comprehend words (receptive aphasia) or the inability to express them (expressive aphasia)—even when the patient knows what he or she wants to say. Once called adult-onset aphasia, it was believed to be exclusively associated with strokes suffered by adults until researchers began describing similar symptoms among children who were subsequently identified as having congenital or development aphasia.

apperception A 19th-century term used by psychologists to describe the mental process by which individuals evaluate new knowledge (data, concepts, sensations, etc.) and, after relating them to previously acquired knowledge, absorb them into their knowledge base.

applied studies A curriculum of academic courses taught and learned by using new knowledge to solve immediate, practical problems. Usually associated with vocational edu-

cation, applied studies focus on practical goals. The training for cabinetmaking, for example, would involve not only learning manual skills but also the principles of measurement, mathematics, plane and solid geometry and even physics, and applying the principles learned to the construction of an actual piece of fine furniture.

Applied studies was an outgrowth of various 19th-century experiments in education. The HAMPTON INSTITUTE may have pioneered applied education after the Civil War, when it taught former slaves the academic and vocational skills needed to lead independent, productive lives. Booker T. Washington carried applied studies a step further at TUSKEGEE INSTITUTE, where he taught former slaves a broad variety of vocational skills and the academic basis for the successful application of those skills. All students learned all aspects of construction, manufacturing and farm management by participating in erecting and maintaining the institute's buildings and operating its many farms and factories. Graduates later took their skills into the community as working professionals.

Pioneer educator JOHN DEWEY refined applied studies as a pedagogical technique he called "learning by indirection," at his experimental LABORATORY SCHOOL, a primary school he founded at the University of Chicago in 1896. Now called indirect instruction, the method used entertaining class projects such as playing house and building and operating an imaginary farm to learn skills such as sewing, cooking, carpentry and planting. Indirectly, students also acquired the academic knowledge—arithmetic, reading, writing, history and science—needed for the successful application of their skills to class projects.

Abandoned in favor of more traditional and often swifter DIRECT INSTRUCTION for many years, indirect instruction, now often called ACTIVE LEARNING, is widely used in combination with direct instruction in most classrooms.

apprenticeship A formal vocational training program in which students learn the skills for a particular trade on the job—usually under the tutelage of a master craftsman.

Apprenticeships date back to the 13th-century European guilds, in which master craftsmen agreed contractually to train young men in their crafts, much as they might their own sons. Apprenticeships generally lasted seven years, during which the master provided his apprentices with room, board, clothing and tools. In exchange, apprentices provided labor, starting with menial tasks at first, but gradually becoming more valuable as their skills improved.

The 19th-century industrial revolution and the 20th-century technological revolution changed the complexion of apprenticeships, as the practice of even the simplest crafts demanded an ever expanding base of academic knowledge. Moreover, the demand for more skilled workers made it impossible for individual craftsmen to train as many workers as the market needed. Schools and colleges began filling the gap by providing basic apprenticeship training, along with needed academic skills. The post-Civil War years saw the HAMPTON INSTITUTE, the TUSKEGEE INSTITUTE and similar institutions providing a combined academic-vocational education for former slaves, while the LAND-GRANT COLLEGES did the same for whites. Graduates still entered the workplace as apprentices, but they came with enough basic skills to become master craftsmen after only one to five years of on-the-job apprenticeships.

The National Apprenticeship Act of 1937 gave the U.S. Labor Department responsibility for setting standards for apprenticeship programs in companies involved in interstate commerce, and the department maintains a Bureau of Apprenticeship and Training in every state. Most states have comparable regulatory laws and agencies. Today's typical apprenticeship programs require a high school diploma and a solid command of basic academics. Most pro-

grams require about 2,000 hours of supervised, on-the-job training plus related instruction either in classrooms, by correspondence or self-study. There are more than 800 types of apprenticeship programs officially approved by the U.S. Labor Department and the 50 states—most of them under joint sponsorship of unions and industry.

Because of a shortage of apprenticeship programs and rampant nepotism in admission policies, fewer than 2% of American high school graduates—less than 1,000—are enrolled in such programs, most of them sons and daughters of union members. Many trades offer no programs at all, and fewer than 20% of the 300,000 participants in existing programs are under 23 years old. In contrast, Germany, which has the most sophisticated apprenticeship system in the world, boasts nearly 2 million participants. Run by the Federal Labor Agency, the German system is a cooperative education program that puts about two-thirds of all students into vocational schools after their sophomore year of high school. A model for the growing COOPERATIVE VOCATIONAL EDUCATION programs in the United States, the German apprenticeship system combines the last two years of vocational high school with three years of on-the-job apprenticeships in virtually every German company. German industry spends an average of about \$8,500 a year per apprentice. The Federal Labor Agency's economists predict which industries are most likely to grow each year and guides apprentices accordingly. In contrast, most American companies prefer spending funds to train and retrain current workers and reserve apprenticeships for more mature applicants. More than three-fourths of American apprentices are 23 years and older.

apraxia An inability to perform specific voluntary muscular movements, such as speaking (verbal) or using classroom materials

(nonverbal), even in the absence of any evidence of paralysis. Believed related to the brain's neurological connections between ideation and motor activity, apraxia seldom produces muscle weakness, atrophy or spasms and does not affect involuntary muscles or movements. Thus, a student consciously unable to use his hand to pick up a pencil can involuntarily scratch a sudden itch. The degree of apraxia determines the ability of a student to adapt to conventional classroom conditions.

aptitude The ability to learn. A broad term, with a wide variety of meanings, aptitude may be genetic or acquired or both. Because of the developmental nature of various acquired aptitudes, they may change radically from year to year. Aptitude may be general or specific, mental or physical, scholastic or vocational, and may or may not reflect intelligence or accurately predict future performance. The most mentally retarded have aptitudes for learning some skills, and emotional factors may affect performances of students with high aptitudes. The correlation between aptitude and future performance usually depends on the amount and quality of subsequent training.

Scholastic aptitude, which reflects a student's general ability to perform in school, is made up of a wide variety of specific component aptitudes such as mathematical, verbal comprehension, verbal expression, language, abstract reasoning, scientific, artistic and musical.

(See also *APTITUDE TESTING*.)

aptitude testing Any of a variety of systems for evaluating an individual's ability to learn. Unlike achievement tests, which are designed to measure a student's accumulated knowledge, aptitude tests are designed to predict future performance by measuring what psychologists believe are intellectual constants that are akin to intelligence and remain unaffected by previous education. Many schools

routinely use standard intelligence tests, such as the *STANFORD-BINET INTELLIGENCE TEST* or *WECHSLER INTELLIGENCE SCALES*, to measure scholastic aptitude. Although many such tests correlate well with future academic performance, some educators argue that they may measure nothing more than a student's accumulated knowledge and level of mental and physical development. Despite denials from test designers, special tutoring has produced statistically significant improvements in test scores of some students. Nevertheless, all schools rely heavily on the results of aptitude tests—public schools to place students in an appropriate track or ability group, and private schools and colleges to determine which applicants to admit.

Test designers classify aptitude tests into three types: general, specific and special. The first type includes the standard intelligence tests mentioned above, along with the widely used *SECONDARY SCHOOL ADMISSION TEST*, the *SCHOLASTIC ASSESSMENT TEST* and the *ACT ASSESSMENT PROGRAM*. Preschoolers and students in the early elementary school years are generally tested for so-called learning readiness with tests for memory, verbal skills, reasoning and logic. Tests for specific aptitudes of older students attempt to measure such components of general scholastic aptitude as verbal aptitude (spelling, syntax and grammar), writing aptitude (speed and accuracy), numerical aptitude, practical and mechanical reasoning, abstract reasoning, spatial relations and logic. Special aptitude tests are performance-oriented and measure such physical and vocational aptitudes vision, hearing, manual dexterity, mechanical aptitude, clerical (writing) aptitude, musical aptitude, artistic aptitude and creativity.

Standard aptitude tests, however, can be notoriously unfair to students and individuals from different cultures and subcultures, including a large proportion of deprived Americans from minority groups with inadequate vocabularies and test-taking skills. To that end, several

test designers have developed so-called culture-fair tests that are relatively untimed and rely on nonverbal test materials such as diagrams, shapes and pictures that are universally familiar. All have fallen short of their goals, however, and culture-fair testing remains but a hope.

(See also *ACHIEVEMENT TESTS*.)

aptitude-treatment interaction (ATI) The degree of success or failure of a specific instructional technique and program (treatment) for a student at a particular aptitude level. ATI studies attempt to prescribe specific programs appropriate for each level of student aptitude and measure the degree of success or failure so that they can change the treatment.

Aquinas, Saint Thomas (1225–1274) Italian priest, philosopher and teacher, whose “Thomist” philosophy remains the heart of all education in Roman Catholic schools the world over. Born of a noble family near Aquino, Italy, he attempted to join a mendicant order in 1243, but his mother confined him to the family castle for more than a year. She released him in 1245, and he went to Paris to study under the philosopher Albertus Magnus (1200–80). He was ordained a priest in 1250, began teaching at the University of Paris in 1252 and was named professor of philosophy in 1256.

At the time, Western thought was dominated by the fourth- and fifth-century teachings of St. Augustine that all truth emerged from God as revelations through the human spirit and senses. Early in the 13th century, however, Islamic scholars had recovered and restored many works of Aristotle based on empirical knowledge as evidenced through the senses and independent of so-called revelations on which the Catholic Church based almost all its truths.

Thomas Aquinas attempted to resolve the differences, saying that the two sets of truths were compatible, with some truths and myster-

ies exposed through revelation, others through empirical study of material things and still others, such as the existence of God, known through both revelation and empirical evidence. A prolific writer, St. Thomas is believed to have authored at least 80 works, which continue to be studied and retranslated to this day.

area studies A college-level interdepartmental study of a specific geographical area of the world or specific nation. Area studies usually include an examination of the economics, political science, anthropology, sociology, psychology, biology, zoology, geography, literature, music, art and culture of such areas as the Middle East, Southeast Asia and Latin America or of large countries such as China, India, Russia or the United States (see *AMERICAN STUDIES*). Not all colleges offer area studies, and those that do offer it as a separate program leading to a degree. Others, on the other hand, build large departments specializing in one or more area studies.

area vocational education school A centrally located school offering primarily or exclusively a curriculum of courses and training that prepare students for work in at least one of five different skills or crafts. The term was first defined in the Vocational Education Amendments of 1968, which provided for government grants to schools to expand the supply of skilled craftsmen in the United States. The amendments were a total revision of the *VOCATIONAL EDUCATION ACT OF 1963*, which was designed to offer educational opportunities to young men and women who, for whatever reasons, were not succeeding in traditional academic programs and had either dropped out of school or were ready to do so. Although many area vocational schools are high schools, the concept also includes junior and community colleges and universities that provide vocational education in nondegree programs to prepare students for existing jobs.

Aristotle (384–322 B.C.) Greek philosopher, scientist and logician, whose extant works served as a basis for classical education in early American and, indeed, most western European schools and colleges.

A “graduate” of Plato’s Academy (see **ACADEMY**), he tutored young Alexander the Great and taught at the Lyceum, a school he founded in Athens. He developed the first system of classification for life forms, as well as Aristotelian logic, politics, metaphysics, ethics, aesthetics and science. Aristotle’s work had been all but forgotten in the West until the 12th century, when 47 surviving texts were rediscovered and set off an educational revival that helped lead to the founding of Europe’s first universities.

A knowledge of Greek (to read his works) was required in all American academies and colleges until the mid- to late 19th century, when this required reading was gradually replaced with practical courses to prepare young men for the industrial revolution and agricultural life on the frontier.

arithmetic The branch of mathematics that includes numbering, counting, measuring, adding, subtracting, multiplying and dividing with real, nonnegative numbers. Simple arithmetic, or “numbers,” was taught in homes and schools in early America as a skill needed for farm management and the marketplace. The industrial revolution of the 19th century and the technological revolution of the 20th required children to learn complex arithmetic.

Formal arithmetic education usually begins in kindergarten and is completed by the end of fourth grade, and it is normally integrated with other subjects such as science, history and literature by teaching students to tell time, learn dates and solve story problems with numbers. Kindergartners usually learn to count from one to twenty, forwards and backwards and to pick up the count from any number. They also learn comparative concepts such as larger than,

smaller than and to add and subtract numbers up to five. Most kindergartners also learn the use of balance scales, measuring instruments and pattern blocks, Cuisenaire rods (see **CUISENAIRE NUMBER-IN-COLOR PLAN**), plastic cubes, pumpkin seeds, acorns and other materials for weighing, counting, comparing, sorting and understanding that written and spoken numbers are conceptually the same as the equivalent number of objects.

First grade arithmetic progresses to include the following: counting forward and backward from 1 to 100; skip counting by twos, fives and tens; instant identification of numbers before and after any number from 1 to 100, the concept of place values; simple addition and subtraction of all single- and double-digit numbers; recognition of the inverse relationship between addition and subtraction; the use of the equality sign (=); the concept of fractions as parts of a whole; and the use of numbers in daily life to measure money, time, capacity, weight and temperature. First graders also extend their learning beyond arithmetic into other branches of mathematics by learning to recognize two-dimensional geometric figures.

In second grade, students learn to master numeration to 1,000—adding and subtracting three single- and two-digit numbers and “rounding off” to the nearest ten or hundred. The standard curriculum also includes counting by odd and even numbers and to 1,000 by twos, threes, fives and tens. Measurement skills include mastery of money, time and the calendar.

Third graders progress to mastery of the multiplication tables through 12. They also learn to add and subtract four- and five-digit numbers, to multiply or divide two- and three-digit numbers by single-digit multiplicands and divisors and to recognize the inverse relationship between multiplication and division. Calculation skills also include mastery of fractions, decimals and the ability to convert from one to the other. Numeration skills extend into the

tens and hundreds of thousands, millions and billions, and measurement skills advance to include length, area, volume, weight and time.

By the end of fourth grade, most schools expect students to have completed mastery of arithmetic, including addition, subtraction, multiplication and division of any combinations of two- and three-digit numbers. Students are also expected to have mastered place values, ratios, rounding and approximation of whole numbers, mixed numbers, decimals, fractions, the banking process, means, medians, modes and mental arithmetic. Story problems in the fourth grade prepare them for entering higher grades and the study of other branches of mathematics such as algebra, geometry and trigonometry.

Arizona The 48th state admitted to the Union, in 1912. Student academic proficiency ranks in the bottom 20% of the nation, with only about one-fourth of all fourth and eighth graders proficient in either reading or math, despite state requirements that students must pass basic skills tests to graduate from high school. In 2004, the state had more than 1,800 public elementary and secondary schools, with nearly 900,000 students, of whom 51.3% were minority students. Hispanic students made up 35.3% of the school population. About 20% of all students in Arizona lived in poverty. The public Arizona University System was established in 1945 to provide common administrative standards for the University of Arizona in Tucson, Arizona State University at Tempe and Northern Arizona University at Flagstaff, each of which has been in existence since the late 19th century—the first two since 1885, the third since 1899. Total enrollment is more than 100,000. The state has two other public four-year institutions and 20 public two-year colleges, with total enrollment of more than 200,000. The two-year and four-year colleges have been at odds for many years over demands

by the two-year colleges for the right to expand and develop new programs offering bachelor's degrees. In the meantime, 30 private four-year and 19 private two-year institutions have absorbed a growing number of students. Fifteen of the private four-year schools and 21 of the two-year institutions are for-profit organizations, including the pace-setting multicampus "Internet University," the UNIVERSITY OF PHOENIX, with more than 100,000 students worldwide. Graduation rates at Arizona's four-year colleges average 48%.

Arkansas The 25th state to join the Union, in 1836. For generations, the state's education system ranked all but lowest in the United States, but, as poverty rates soared and the state's best-educated men and women fled to other areas, the legislature determined to improve education. In the 1980s, the state began raising spending on education from 19% of total revenues to 42% in 1995—third in the nation in terms of spending on education as a percentage of total state and local revenues. By 2002, a better-educated workforce had helped swell the state's gross product, and although the dollar amount of spending on education continued to increase it represented a lower percentage of overall state spending, 29%. The effects of the state's focus on education have been dramatic, raising the overall academic quality of public schools from near-bottom in the nation to 37th—ahead of such states as Rhode Island, California and much of the South. Student-teacher ratios in public schools are among the lowest in the nation, student proficiency of eighth graders in reading has climbed from almost the worst in the nation to only two points below the national average, and fourth graders are now at the national average. Student proficiency of eighth graders remains low in mathematics, however, with only 22% proficient, but 34% of fourth graders are proficient, and their

average scores are touching the national average. In 1990, fewer than two-thirds of Arkansas's adult population had obtained high school diplomas, and less than 10% had college degrees. By 2002, the percentage of Arkansans with high school diplomas had climbed to 81%, and the percentage with bachelor's degrees was almost 20%.

Arkansas has about 450,000 students attending more than 1,100 elementary and secondary schools. Twenty-five percent of the students lived in poverty in 2001, compared with a national average of 15.1%, but the high school drop-out rate is only 5.3%, compared with a national average of 10.7%. The state has 11 public and 10 private four-year institutions of higher education and four public and four private two-year colleges. Although total enrollment at the state's four-year colleges is about 120,000, the graduation rate remains an abysmal 38.4%.

Armstrong, Samuel C. (1839–1893) A Union general in the Civil War who founded and headed the Hampton Normal and Industrial Institute to educate former slaves. Born and raised by missionary parents in Maui, Hawaii, he enrolled at Williams College, but left to lead a company of fellow students into the Union army. After action at Gettysburg, he was promoted to colonel and given command of the Ninth Regiment, U.S. Colored Troops. After distinguished service, he was promoted to brigadier general.

After the war, as freed slaves flocked to Union army camps in search of opportunities, Armstrong was appointed superintendent of education for the FREEDMEN'S BUREAU and took charge of a huge encampment of several thousand illiterate and destitute former slaves near Hampton, Virginia. "The thing to be done was clear," he later said. "To train selected Negro youth who should go out and lead their people. . . ." He proposed converting the mansion and estate he occupied into a school based on

the model of the Hilo Manual Labor School for native Hawaiians that he had seen developed during his youth. Armstrong obtained funds and teachers from the AMERICAN MISSIONARY ASSOCIATION and, in 1868, opened the Hampton Normal and Industrial Institute. As director, he combined academic and manual training in a three-year curriculum that included reading, writing and language skills, mathematics, history, natural science, an agricultural course, a commercial course and a course in mechanics. Armstrong expanded the school with funds from northern friends and turned it into a model for dozens of other, similar schools, including the famed TUSKEGEE INSTITUTE, whose founder, BOOKER T. WASHINGTON, was one of Armstrong's protégés at Hampton. Armstrong headed Hampton until his death at the age of 54. It later evolved into today's Hampton University, a coeducational institution with (in 1995) four undergraduate schools, one graduate school and more than 5,000 students, 95% of whom are black.

(See also HAMPTON-TUSKEGEE MODEL.)

Army Alpha and Beta tests A battery of tests to determine intelligence of U.S. Army recruits in World War I. Developed by Stanford University psychologist LEWIS M. TERMAN and a committee of the American Psychological Association, they were designed to help the Army place recruits in jobs appropriate to their intelligence and skills, a task that had become overwhelming when the United States started drafting recruits to go to war and the size of the military mushroomed from 180,000 to nearly 3 million. The Army Alpha Intelligence Test was a verbal test to measure intelligence of literate recruits, and the Army Beta Intelligence Test was a nonverbal test for the roughly 25% of recruits who were illiterate, either because they had been unschooled or because they were non-English-speaking immigrants swept up in the draft.

The tests were among the first intelligence tests developed in the United States. When they were released for civilian use following the war, they sired hundreds of other tests used in schools and businesses to evaluate intelligence and aptitudes.

Army Junior Reserve Officers Training Corps A high-school training program financed by the Army to teach beginner-level basics in military science, including drill, leadership, map reading, first aid, military history, marksmanship, weapons and weapon safety. Offered as electives in any public or private high schools that add it to their curricula, the program is cost-free (the Army provides instructors, textbooks and equipment) and incurs no obligations of any kind to the military, although it may improve the chances for obtaining ARMY RESERVE OFFICERS TRAINING CORPS college scholarships.

Army Reserve Officers Training Corps (ROTC) The program consists of two parts: a two-year basic course, followed by a two-year advanced course. The initial program includes on-campus basic education in military history, national defense and military management, along with physical training and military drills several times a week. The Army pays part _of the cost for all textbooks, uniforms and other essential materials but offers no pay to non-scholarship students during the two-year basic course. Those who complete the two-year physical and academic program successfully and show the potential to become officers can enroll in the advanced course—a two-year program of instruction in organization and management, military tactics, ethics and leadership development. Students must attend a five-week advanced training camp in the field during the summer of their junior and senior year. All cadets in the advanced course and at training camps receive annual stipends of \$4,000 each

per academic year. The army also offers a two-year ROTC program for junior and community college students, along with graduate school students and undergraduate upper classmen who have not taken the basic course during their first two years of college. To enter the two-year program, students must first complete the five-week summer basic training camp.

All ROTC applicants may apply for two-, three- and four-year scholarships. Awarded competitively, each scholarship pays annual college tuition and fees, textbooks and supplies and a tax-free stipend of \$4,000 per academic year. Four-year scholarships are awarded only to students entering college as freshmen. Two- and three-year scholarships are awarded to students already enrolled in college and to on-duty Army enlisted personnel.

Graduates of four-year ROTC programs receive a conventional bachelor's degree and a lieutenancy in the U.S. Army. They must serve for at least three years; scholarship students must serve four. Nursing students may enroll in the ROTC and attend a Nurse Summer Training Program instead of the regular camp, to prepare for the Army Nurse Corps. They must then serve in the corps for three years.

Although the ROTC provided the majority of Army officers during the Korean and Vietnam Wars, it is now offered on campus at only about 275 colleges in the United States, although about 1,000 other schools without on-campus ROTC have cross registration agreements with nearby colleges that do offer such training. ROTC was driven off many campuses during the Vietnam War and remains banned at most because of the Army's position on homosexual soldiers.

Army Specialized Training Program (ASTP) A World War II program that permitted draftees in college to finish their undergraduate and graduate education before entering military service. Designed to provide the Army with a

much needed corps of officers, doctors, engineers and other specialists, ASTP was an accelerated, year-round program that combined education with on-campus military training, akin to that of the U.S. MILITARY ACADEMY at West Point. Colleges and universities contracted to be either Army ASTP or Navy v-12. Depending on whether they were training to be future soldiers or sailors, students transferred to colleges that had been taken over by either the Army or Navy. Regardless of the college they attended, they received degrees from the colleges where they originally enrolled.

ASTP offered 22 programs of study including engineering, medicine, dentistry, veterinary medicine, personnel psychology and foreign languages. Those who completed bachelor's degree programs could either enter the Army as second lieutenants or continue graduate studies to become doctors, lawyers, engineers, etc., before serving in the Army in those capacities. The ASTP was the progenitor of the post-World War II RESERVE OFFICERS TRAINING CORPS.

Army War College One of several schools of graduate studies established for the military in the decades following the Civil War. Like the NAVAL WAR COLLEGE and Army General Service and Staff School (later, the COMMAND AND GENERAL STAFF SCHOOL), the Army War College has two purposes. One was to train professors of military science and tactics to teach in LAND-GRANT COLLEGES. Many required such studies and subsequent service in state militia in return for free tuition. The second purpose of the college was to provide prospective generals with the academic equivalent of a doctorate, which is not available at the U.S. MILITARY ACADEMY at West Point, New York. Only colonels are admitted to the War College, which is in Carlisle, Pennsylvania.

art education The teaching and learning of drawing, painting, sculpting and other meth-

ods of graphic and three-dimensional representations and the appreciation thereof. Art education consists of two elements: expressive and responsive. The former is taught in specially equipped studios by trained artist/teachers, who must be skilled in demonstrating what they expect of their students. Responsive art is usually taught as part of history in the lower grades or as a combined art appreciation/art history course in high school or college.

For centuries, art was a decorative craft taught by master craftsmen to their apprentices. It did not become part of the formal curriculum of educational institutions until females began to attend schools in the 18th and 19th centuries to learn the "ornamental" arts as a preparation for marriage. Thomas Jefferson proposed art as part of the original curriculum of the College of William and Mary—not as a decorative art, but as a practical skill for preparing architectural and mechanical drawings to build a new nation. Art education as we know it today did not enter the formal curriculum until the middle to late 19th century, as individual schools relaxed traditionally harsh disciplinary methods and allowed students time for free play. Most elementary schools continue to use art classes to give ordinary students an enjoyable break from the standard academic classroom routine.

The PROGRESSIVE EDUCATION movement of JOHN DEWEY first introduced art as a basic, required element of the educational day. The aim was to teach young children motor skills and to encourage them to express themselves freely with different media. Led by trained artist-teachers, art classes eventually became a standard part of the private school curriculum. Until the mid-20th century, however, public schools balked at including art and music in the basic curriculum. Unlike practical courses such as English, math, science and history, artistic expression was held to be reserved for a gifted elite, while art appreciation was consid-

ered useful only for a financial elite that could afford collecting. The prosperity that followed World War II allowed the fine arts to become a standard part of many public school curricula, though they tend to be among the first courses eliminated in schools with shrinking budgets.

Although colleges, universities, museums, specialized art schools and institutes offer advanced studies in art, art history and art appreciation, advanced students continue, as in earlier days, to rely on the individual tutelage of master craftsmen.

articulation (program) The meshing of course materials within each school grade (horizontal) and between grades (vertical). Effective horizontal articulation interrelates all courses within a curriculum to each other. **TEAM TEACHING** has proved an effective method of achieving horizontal articulation, by tying studies of every subject in each grade to each other. Thus, a teaching team would tie the study of ancient Egypt in history class, for example, to the study of plane and solid geometry in mathematics class, to the study of mechanical advantage in physics (science) class, to the study of hieroglyphics in language class and to the study of one- and two-dimensional drawing in art.

Effective vertical articulation permits students to progress academically from grade to grade smoothly, with no curricular overlap or gap or radical changes in teaching methods between the end of a course in one year and the beginning of the same course the following year. To achieve effective vertical articulation, some schools assign one teacher to the same group of students for two or more consecutive years.

Ineffective articulation within an individual school is usually the result of ineffectual administration and curriculum supervision. Excessive teacher absenteeism and introduction of substitute teachers also produces poor articulation. The most difficult vertical articula-

tion to achieve is between schools—elementary and middle, middle and high school and (the most difficult of all) high school and college.

artificial intelligence Software programs that permit computers to solve problems, communicate with each other, respond to human speech and otherwise imitate elements of human intelligence.

Art Institute of Chicago One of the great American **MUSEUMS** founded during the era of burgeoning cultural philanthropy in the last quarter of the 19th century. Although some museums were designed as art repositories for researchers and the very wealthy, many were built as educative institutions in an era when few Americans could afford the time or money to attend school.

The Art Institute was actually founded by artists in 1866 as the Chicago Academy of Design. A group of wealthy Chicagoans later transformed it into the Chicago Academy of Fine Arts and, finally, the Art Institute of Chicago. Their goal was to transform Chicago into a cultural rival of New York by establishing a superlative collection of European painting and sculpture. The institute continued to function as an art school, and like many museums of the era, rivaled nearby universities as centers of education. Its school eventually evolved into today's School of the Art Institute of Chicago, a specialized four-year college and graduate school offering bachelor's and master's degrees in the fine arts, art and design to 1,800 undergraduate and more than 500 graduate students. The institute's art collection has expanded to include American and Oriental, as well as European, sculpture, paintings, prints and drawings. It also houses African and pre-Columbian art, two libraries and a theater.

arts and crafts An extension of the art curriculum to include the making of decorative

objects, pottery, baskets, woven textiles and other handicrafts. The manufacture of simple handicrafts not only teaches and enhances motor skills, but it also allows far more children to discover and develop creative talents than art alone.

Ascham, Roger (1515–1568) English author of *The Scholemaster* (1570), the standard pedagogical text used by tutors and parents in the American colonies and in England to teach their sons during the 17th century. At the time, the colonial and English nobility and landed gentry were heatedly debating the advantages and disadvantages of schools over home instruction. English traditionalists favored home instruction by private tutors. Life in the American wilderness gave colonial parents little choice but to teach their children at home. To fill the role of tutors, most parents used *The Scholemaster* as their pedagogical guide.

A scholar at St. John's College, Cambridge, Ascham tutored the future Queen Elizabeth I in 1548–50; he remained a counselor when she ascended the throne and wrote all her official letters to foreign rulers. Ascham divided *The Scholemaster* into two volumes: The first was devoted to ethics; the second, to teaching methods. On the importance of tutoring, Ascham wrote that "learning teacheth more in one year than experience in twenty, and learning teacheth safely." He urged tutor-parents to use love rather than fear when teaching, gentleness instead of beating, encouragement instead of punishment and patience rather than irritation. Apart from his contribution to education, Ascham is also known as "the father of modern archery," a sport he described in his treatise on bows and arrows, entitled *Toxophilus*.

Asian Americans Americans of Asian origin or descent. An American missionary brought the first three recorded arrivals from China in the late 1840s. The graduation of one of the

three young men from Yale in 1854, however, marked a falsely auspicious start for Asian immigration to the United States. The 1850s saw Western military powers carve up China, and as American sailors spread word of the "Mountain of Gold" in California, an estimated 25,000 Chinese prospectors flocked eastward across the Pacific. By 1860, there were 34,933 Chinese in California (all but 1,784 of them men), and virtually all of them intended to return home to China after making their fortunes. White Californians greeted them with hostility. Miners physically forced them off the land and stole their most promising claims. Undiscouraged, the immigrants found other ways to profit from the gold rush by providing the tired, filthy white miners with services unavailable from Americans. They opened inns, restaurants and laundries.

In the 1860s, the Chinese took advantage of a labor shortage to sign on as "coolies"—from the Hindi for hired, unskilled laborers—to build the western half of the first transcontinental railroad link through the steep rocky canyons of the West. The white laborers originally hired for the job had deserted their railroad jobs to join in the continuing hunt for gold. When the railroad boom subsided, Chinese workers moved to the giant farms then spreading across California. Shunned by whites, the Chinese established their own communities in cities like San Francisco, where they could enjoy the social and cultural customs of their homeland in peace.

The economic depression of the 1870s, however, created job shortages that sent mobs of angry whites through the Chinatowns of the West, beating, looting and sometimes killing the hard-working Chinese. In 1878, the entire Chinese population of Truckee, California, was driven from town; in 1880, white mobs destroyed every Chinese business and home in Denver; and in 1885, 28 Chinese were massacred in Rock Springs, Wyoming. Although the

Chinese population of California only numbered about 75,000, or less than 10% of California's 865,000 residents, Congress passed a law in 1879 to prohibit any ship from bringing more than 15 Chinese passengers. Three years later, it passed the Chinese Exclusion Act of 1882 suspending entry of all Chinese laborers for 10 years and denying reentry by any who returned to China to visit. It also banned them from becoming naturalized American citizens, although by federal law children born in the U.S. automatically became citizens. Chinese immigration to the U.S. dropped from 39,579 in 1882 to 22 in 1885. Subsequent Exclusion Laws in 1892, 1894, 1917 and 1924 extended and hardened the prohibitions against Chinese immigration—even in American territories in the Pacific, such as Hawaii and the Philippines.

The closed-door policy, however, cut off a supply of badly needed farm workers, and California farmers turned to Japan to supply their needs. By 1900, more than 24,000 Japanese had arrived in the United States, and, by 1910, the Japanese population had jumped to 67,000. Spurred by powerful racist organizations, California again responded with strict laws that barred all aliens from landownership, denied Asians fishing licenses, banned them from many business enterprises and established a system of strict social segregation that even excluded their children from white schools, regardless of whether they were born in the U.S. or abroad. The California laws spurred many Asians to move eastward to start new lives in other American cities where they hoped to find less discrimination.

In 1917, Congress passed a law effectively barring entry of all Asians into the United States. The law remained in effect until the end of World War II, during which about 112,000 Japanese Americans—those born in the United States as well as those born in Japan—were interned in barbed wire concentration camps. America's alliance with China and the plight of

millions of displaced refugees during World War II led to reform of U.S. immigration laws and an easing of immigration restrictions. A new Immigration Act in 1965 replaced immigration quotas based on national origins with annual hemispheric limits of 170,000 new immigrants from outside the Western Hemisphere and 120,000 a year from within. The new law permitted no more than 20,000 immigrants from any single nation. Within those limits there was a complex system of preferences, including adult children, parents and kin of American citizens, scientists and professionals, artists and those with skills in great demand in the United States.

The result was a steady migration of Asians from all parts of the Orient, with occasional disproportionate surges of refugees from countries that have suffered national tragedies—Koreans, after the Korean War, for example; the Vietnamese after the Vietnam War; and Chinese fleeing poverty and political oppression. In 2003, the estimated population of Asians and Pacific Islanders in the United States reached about 12 million, compared to 3.5 million two decades earlier. Although they made up only 5% of the American population and their children constituted only 4% of the public elementary and secondary school student population, Asian Americans made up more than 6.1% of the total population at U.S. institutions of higher education. At some of the most academically demanding colleges, such as Harvard or Stanford, Asian Americans make up from 10% to 30% of the student population.

Moreover, Asian high school students outperformed all other students—whites as well as minorities—in almost all subject areas except English. Asian children acquire their academic skills at an early age, according to a 1998 longitudinal study of entering kindergarteners by the U.S. Department of Education. The study found that Asian youngsters scored nearly 5.8% higher than white children in reading and

nearly 4% higher in math. Tenth grade Asian students tested 5% higher than white students in mathematics, 1.6% higher in science, 1% in history and their average scores were identical with those of white tenth graders in English. Although college-bound Asian students scored 4% lower than American whites in the College Board's verbal Scholastic Assessment Test for college admissions in 2003, they scored 7.7% higher in the math SAT.

assembly A convening of the entire student body of the school into a central hall or auditorium. Once a fixture of the daily school schedule, most public schools did away with assemblies when they introduced schoolwide intercom systems for administrators to make announcements to students in their classrooms.

Still a fixture of most private schools, assembly is the one school activity that physically unites the entire student body, which the classroom system normally segregates on the basis of age, ability or subject studied. For that reason, many educators believe assembly is the most effective way of building a sense of community among students and faculty and imparting common values. Assemblies also provide opportunities to foster student government and to teach students proper behavior in large groups. Assemblies also permit an entire school to view artistic and cultural events or hear guest speakers that supplement classroom learning.

assimilation and accommodation The accumulation and absorption of new information and knowledge and the rearrangement of one's scheme of understanding to include the new knowledge. First described by Swiss scientist JEAN PIAGET, the two terms are interdependent. *Assimilation* is the first step in knowledge acquisition, as new information enters the *scheme*, or one's framework of knowledge and understanding. Whenever new data invades,

however, the shape of the scheme necessarily changes as it *accommodates* the new knowledge and reshapes the recipient's understanding. Thus, a young child's scheme, or understanding of the sun as it seems to pass overhead, is changed considerably when he or she assimilates new information that the Earth travels about the sun. Piaget called the process of reshaping the scheme through assimilation and accommodation *equilibration*. While new knowledge is assimilated, the scheme is said to be in disequilibrium, and once accommodation is complete—that is, the moment the subject can say, "I understand!"—the scheme is said to be in equilibrium. The scheme is in disequilibrium far more than in equilibrium, according to Piaget, because all new knowledge generates a need for more knowledge, more assimilation and, therefore, more disequilibrium. This constant reshaping of the scheme, by assimilation and accommodation, necessarily keeps it in a state of continual imbalance, or disequilibrium.

(See also COGNITIVE STYLE.)

associate degree A certificate attesting to the successful completion of a two-year course of study at a community college, junior college, technical institute or, in some cases, at a four-year college. Although the associate degree usually has considerable value and may be required in vocations not requiring conventional four-year degrees, in traditional academic terms, the "associate in arts," "associate in science," "associate in journalism," and the more than four dozen other associate degrees do not serve as academic credentials to continue into higher education. Individual courses in associate degree programs, however, may be credited toward the work for a bachelor's or master's degree.

associative learning The process of acquiring, understanding and retaining new informa-

tion by relating it to one's existing body of knowledge. In simplest terms, teachers of young children rely heavily on similes to promote associative learning—for example, by explaining that the moon is round, like a ball, rather than simply saying that a planet is round. Associative learning is one of many cognitive processes first described by Swiss scientist/psychologist JEAN PIAGET.

astronomy The scientific study of celestial space. Long a required part of the elementary and secondary school and college curricula in the United States, astronomy started to get “crowded out” of the American curriculum after the Civil War as education took a more practical direction with the industrial revolution and the expansion of the western frontiers. The new LAND-GRANT COLLEGES, especially, were far more concerned with teaching students to tame the earth beneath their feet than to recognize the stars in the sky. The startling advances in chemistry, physics, biology and zoology during the first half of the 20th century made them the dominant sciences in secondary schools and colleges, and astronomy was relegated to the status of a college elective. Secondary schools incorporated it into “general science” courses. The launch of the satellite *SPUTNIK I* in 1957 by the Soviet Union during the darkest days of the cold war provoked an acceleration of American efforts to explore space—and to teach astronomy to the young. Within a few years, astronomy courses were added to virtually every American high school and college curriculum, where they now form an important element of the science curriculum.

athletics Technically *athletics* refers to track and field, but the term is now widely used in the United States to mean all sports played at school and college. In English-speaking countries other than the United States and Canada,

athletics and non-English variations such as *athletisme* refer only to organized track and field events—running, jumping and throwing, as in the ancient Olympic Games. Derived from the Greek *athlein*, meaning “to contend for a prize,” athletics first became an element of the overall educational program in ancient Sparta, where physical education was meant to develop endurance and muscular strength as well as mental and moral fortitude. Gymnastic exercises and sports included the pentathlon (running, jumping, throwing the discus and javelin and wrestling), ball games and the pancratium (a combination of free-for-all wrestling, boxing and fighting—with no rules).

As used in the United States, athletics refers to the full range of organized interscholastic and INTRAMURAL PROGRAMS played by teams and individuals. Athletics had been a part of English educational tradition until 1580, when a Puritan proclamation transformed Sunday from a day of recreation into a variation of the Old Testament Sabbath, a day of penitence and prayer, thus relegating sports and other forms of recreation to the list of sinful activities banned among the pious. When the Puritans settled Massachusetts, they brought the ban against Sunday amusement with them. Although Virginia had a similar ban, some of the Middle Atlantic states were more tolerant. Philadelphia permitted Sunday fishing, while New York allowed officers to play cricket and rackets, and Long Island permitted racing. Nevertheless, when the First Continental Congress met in 1774, the Puritans still had enough influence to ban most sports in one of the Articles of Association.

Physical education did not make its way into the American school curriculum until 1817, when the UNITED STATES MILITARY ACADEMY built the first college gymnasium. It was used in the Spartan tradition, however, for physical training, rather than athletics. Physical education was introduced into the secondary

school curriculum in 1823, when CATHERINE BEECHER introduced calisthenics at her Hartford Female Seminary in Connecticut and GEORGE BANCROFT introduced gymnastics into his Round Hill School in Massachusetts. Both were imitating the much admired German GYMNASIUM, a school where physically fit young men were found to perform better academically.

Athletics, as Americans know it today, however, did not become a standard part of education until after the Civil War, when private academies and colleges expanded their curricula beyond theology and admitted less pious students than had been traditional. Several colleges, including Harvard, fielded informal rugby clubs, but injuries grew so severe that Harvard banned the sport in 1860. The first formal intercollegiate competition in any sport may have occurred on November 6, 1869, when Rutgers defeated Princeton in an early version of modern football. The years between 1875 and 1900 saw sports of every variety appear on the campuses of those private academies and colleges that could afford the space and, where students were wealthy enough to afford the equipment, uniforms and leisure time to field teams.

Public colleges and secondary schools did not incorporate athletics or recreation into their curricula until after 1900, when the CHILD-CENTERED EDUCATION reform movement swept across the United States and transformed play and recreation from religiously sinful activities into normal, healthy elements of child development. In schools and colleges, athletics are usually, but not always, an extracurricular activity, outside the realm of physical education. The exception is at some private secondary schools, which may require intramural sports participation as part of their PHYSICAL EDUCATION programs. Athletic programs are headed by athletic directors who have the authority to appoint coaches in each sport. Depending on the sport and its importance to the school or college, coaches may be faculty

members with teaching obligations who coach part-time for an extra stipend, or they may be a professional sports coach, in many cases retained at a salary considerably higher than his counterpart in the classroom. Some schools and colleges designate sports with the least participation as “clubs,” which receive no institutional financial support. Although club participants have permission to participate as representatives of their schools, they usually must pay their own expenses.

The range and importance of the athletic program varies widely, according to the size, wealth and location of the school or college and the gender of the student body. An average athletic program at a suburban or rural coeducational high school or college could include soccer, football, cross-country running and field hockey in the fall; basketball, swimming, wrestling and gymnastics in winter; and baseball, softball, volleyball, lacrosse, tennis and track and field in the spring. A wealthier school or college might also offer ice hockey, fencing, squash, golf, small boat racing or even polo, while schools in the snow belt or mountains would almost certainly offer ice hockey or skiing or both. Member colleges in the NATIONAL COLLEGIATE ATHLETIC ASSOCIATION (NCAA), one of the major governing bodies in intercollegiate sports, have as many as 20 sports for men and women, depending on the size of the college. Although college sports generate revenues of about \$16.5 billion a year—about 9.5% of total college revenues—almost all sports programs operate at a financial loss. Even high-visibility sports that draw huge paying crowds seldom produce enough profits to cover costs of facilities and equipment for less popular sports with few or no paying spectators and for the myriad of intramural and individual recreational sports that colleges provide at little or no charge to students.

Almost all intercollegiate sports are regulated by the NCAA and the National Intercol-

legiate Athletic Association. Interscholastic sports competitions are regulated by local and state leagues that usually try to group competing teams according to school size. City high schools and colleges tend to have the fewest athletic facilities; some have none. Suburban high schools and suburban and rural colleges tend to have the most. Student participation in athletics varies widely, according to school location and size. Suburban schools have higher rates of participation than urban or rural schools, and students attending schools with fewer than 1,500 students have higher rates of participation than larger schools. Although student polls show athletics to be the most popular extracurricular activity, only about 55% of all high school students—and only 43% of high school seniors—participate in any athletic activity. Boys participate more than girls—58.5% vs. 52.8% of all girls. Participation is highest among white, male, college-bound students. Minority groups participate less than whites, and Asian students participate more than black and Hispanic students. Students from the highest socioeconomic levels participate more than students from the lowest socioeconomic levels, and students with high grades participate more than students with low grades. Low female participation was, for many years, partly the result of gender discrimination, which was outlawed by the EDUCATION AMENDMENTS OF 1972. Since then, all schools and colleges receiving any federal funds must provide equal numbers of sports, athletic facilities and practice time for men and women. Several states, including California, have passed similar laws.

Those colleges that failed to obey the letter of the law were targets of lawsuits by the National Organization for Women and numerous women athletes charging gender discrimination in sports. As late as 2002, men still represented nearly 50% of participants in intercollegiate sports and received 59% of the schol-

arships and 58% of the recruiting funds. The figures are somewhat misleading, however, because of the absence of female baseball, football and wrestling teams. If participants in “unisex” sports such as men’s football and baseball and female field hockey and softball are deducted from total participants, female participants outnumber males, comprising 52.56% of all participants.

athletic scholarships Financial grants awarded by public and private colleges and universities and by some private high schools to outstanding athletes. Most athletic scholarships are awarded to athletes in high-profile sports with facilities for large paying audiences. Because of the revenue-producing potential of such popular spectator sports as football and basketball, many colleges and universities over the years have routinely ignored the academic qualifications of athletes to whom they awarded scholarships. More than \$500 million in athletic scholarships are awarded annually—many covering full room, board, tuition and college living expenses. To silence complaints that member colleges were exploiting young athletes, the National Collegiate Athletic Association enacted Proposition 48 in 1983, raising minimum academic standards for athletic scholarships. The new standards were based on a combination of SAT scores, high school grade point averages and degree of difficulty of high school courses in which the athlete had enrolled.

By 2004, graduation rates of all athletes at 320 Division I colleges—those with the highest-visibility sports programs—had jumped from less than 50% to 62%, about 2% higher than the graduation rates for all students at those colleges. Male athletes had graduation rates of 57% and women athletes 71%, compared with 57% and 63%, respectively, for men and women in the general student population. The graduation rate for black male athletes was a dismal 22%, compared with an even more

disastrous rate of 11% for all black students at the same group of schools. Football players had a graduation rate of 54% (62% for whites, 49% for blacks), while the graduation rate for male basketball players was 43% (53% for whites, 38% for blacks). Female basketball players had a graduation rate of 63% (69% for whites, 56% for blacks).

Of major colleges awarding athletic scholarships, the University of Texas had the lowest graduation rate in the nation among athletes—34%. (Although Mormon-run Brigham Young University had a graduation rate of only 19%, the figure was misleading because of the religious requirement that Mormons go on two-year missions during their college years and thus “drop out” in a statistical sense.) Other major colleges whose athletes have graduation rates of less than 50% were University of Arkansas (35%), University of Oklahoma (40%), Michigan State University (41%), Louisiana State University (42%), North Carolina State University (42%), University of Florida (42%), University of Colorado (43%), Arizona State University (44%), Oregon State University (44%), University of West Virginia (46%), Auburn University (48%), University of California (48%), Florida State University (49%) and University of Alabama (49%). Stanford University athletes had the highest graduation rate, 85%, followed by Boston College (78%), Notre Dame (77%), University of Virginia (75%) and Penn State (74%). Athletes at Kansas State University, University of Oregon, University of Nebraska and Purdue University had graduation rates of 60% to 70%. No Louisiana State University basketball players graduated in the 1990s, and only 8% of University of Kentucky basketball players managed to do so. Other colleges whose basketball players had abysmally low graduation rates were University of New Mexico, 14%; University of Louisiana at Lafayette and the University of Louisville, 17% each; and the University of Connecticut, Iowa

State University and University of Texas at Austin, with graduation rates of 27% each. In contrast, Bucknell University had a 100% graduation rate, University of Wisconsin at Madison 73%, and University of North Carolina at Chapel Hill and Villanova University 67% each.

Many factors affect graduation rates of athletes that do not affect other students, among them the lucrative offers from professional sports teams and the inordinate amount of time required for training. In 2004, the NCAA addressed the problem of athlete graduation rates with a new system of Academic Progress Rates that would reduce the permissible number of athletic scholarships if their athletes failed to meet minimum, college-level academic standards. To measure college compliance, the NCAA used a complex scoring system to grade teams as a whole, awarding points only for students who complete their course work. Some 48% of all major college football teams and 47% of basketball teams failed to meet the standards in the 2004–05 academic year. Forty-four percent of wrestling teams and 42% of baseball teams also failed. Rates of failures for other sports ranged from 3% for women’s rowing to 29% for men’s indoor track. In all, 1,198, or nearly 21%, of the 5,720 teams in sports at major colleges and universities failed to meet the NCAA minimum academic standards and risked losing one or more of the permissible number of athletic scholarships they could award in the coming year. Teams with failure rates of 20% or more were men’s indoor track (29%), men’s soccer (28%), men’s outdoor track (26%), men’s tennis (22%), women’s basketball (21%) and men’s cross-country (20%).

Atlanta Compromise BOOKER T. WASHINGTON’S proposal for achieving racial harmony through interracial economic cooperation devoid of all social integration. He delivered his proposal in a speech at the Cotton States International Exhibition, an 1895 world’s fair to

promote economic growth in the American South. In the Atlanta Compromise, Washington sought "to say something that would cement the friendship of the races and bring about hearty cooperation between them." The United States was suffering from a severe economic depression, however, and racial tensions in the South had erupted in widespread race rioting over black demands for greater equality. Whites feared that low-cost black labor would force them from their traditional jobs. The Atlanta Compromise sought racial peace. In effect, Washington accepted the "separate but equal" laws of the South, but sought accommodation by suggesting, "In all things purely social we can be as the fingers, yet one as the hand in all things essential to mutual progress."

"Nearly 16 millions of hands will aid you in pulling the load upward," he pledged, "or they will pull against you the load downward. We shall constitute one-third and more of the ignorance and crime of the South, or one-third of its intelligence and progress. . . ." Hailed as a peacemaker by whites across the United States and the Western world, he was castigated by intellectual blacks such as W. E. B. DuBois who demanded nothing less than complete equality and integration into white society, as guaranteed by the U.S. Constitution.

Atlanta University One of 20 colleges founded by the FREEDMEN'S BUREAU after the Civil War to provide higher education for blacks in the South. Now part of Clark Atlanta University, a predominantly black, private institution affiliated with the United Methodist Church, Atlanta University gained worldwide fame during the 23-year teaching career there of W. E. B. DuBois. America's first black sociologist, DuBois first went to Atlanta in 1897 to chair the sociology department; he also taught economics, history and political science. While there he conducted the first major sociological study of black life in the South. The 2,000-page



The main entrance to Atlanta University, one of 20 colleges founded to educate African Americans in the South after the Civil War (Atlanta University Archives)

work represented an encyclopedia of African-American life and culture and won a grand prize and gold medal at the 1900 World's Fair in Paris, France.

In 1909, DuBois helped found the NATIONAL ASSOCIATION FOR THE ADVANCEMENT OF COLORED PEOPLE, and in 1910 he left Atlanta University to serve as editor of the NAACP's magazine, *Crisis*. In 1934, he quit over policy differences regarding voluntary segregation and returned for a relatively uneventful 10-year tenure at Atlanta. Atlanta merged with Clark University in 1988 to form Clark Atlanta University, which now has nearly 4,000 undergraduates and nearly 1,000 graduate students.

at-risk students Students in danger of failing to complete their formal education because

they are either unable to respond to the demands of school or because the school is unable to respond adequately to their needs. Without intervention, the at-risk student usually either drops out, is expelled from high school or is functionally illiterate upon graduation.

Students of any age and social or economic background may be at risk, and students not at risk at any given age may, often quite suddenly, become at-risk students because of environmental or developmental factors. In general, urban minority adolescents from deprived areas are most at risk and, indeed, have the highest school drop-out rates (see DROPOUTS). Any average student, however, may be put at risk in schools whose faculty and staff are less responsive to the needs of average students than they are to those of exceptionally gifted or exceptionally troubled students. Gifted students are often channeled into college-bound honors programs, while students who are clearly unable to respond to academics are often shunted into vocational education. Some 40% of American high school students, however, are relegated to GENERAL EDUCATION programs, which provide no preparation for college and inadequate vocational training for the workplace. Many are intellectually, emotionally and physically healthy average students. Almost two-thirds of general education track students drop out—more than 2 million annually. They usually cite “boredom” and “not interested in school” as their primary reasons for dropping out. Just as average students may be put at risk in schools that fail to meet their needs, exceptionally gifted or talented students may also be put at risk in schools that fail to nurture their special gifts and talents.

In general, however, students most at risk are those with one or more of a host of emotional, intellectual or physical disabilities due to deep-seated emotional problems; economic, social, cultural or emotional deprivation; physical or sexual abuse; disease; substance abuse;

premature sexual activity; teenage pregnancy; racial, religious, ethnic or gender discrimination or harassment; lack of fluency in the English language; prior educational deprivation; deficiency in basic skills, especially language and mathematics; poor teaching and uninteresting curricula; inadequate school facilities; learning disabilities; physical and neurological handicaps; and mild mental retardation.

Alarmed by the steadily increasing high school drop-out rate (then in excess of 27% nationally and approaching 40% in some states), the federal government enacted the far-reaching ELEMENTARY AND SECONDARY EDUCATION ACT OF 1965 to provide for compensatory education and counseling for at-risk students, and many schools and communities have set up independent intervention programs that provide skilled counselors and tutors for at-risk students.

The programs seemed to produce a dramatic reduction of the national high school drop-out rate to 8.8% in 2002, with starting declines in drop-outs in all sectors of the student population—boys, girls, blacks and whites. Drop-out rates among white children fell by 23% to 8.7%, while drop-out rates among black children fell from a high of more than 30% in the mid-1960s to 10.1% in 2002. Some critics of compensatory education belittled the statistics, charging they were the results of increased “social promotions” to permit academically weak students to progress and graduate with their age-mates, regardless of their grades. Nationally, 31% of teachers reported promoting students on the basis of age in 2001, a decline from 41% in 1998. But the Los Angeles Unified School District, the nation’s second largest, admitted that, despite demanding statewide academic standards for graduation, many schools simply ignored the standards and granted social promotions to about 40% of their more than 700,000 public school students. Because of the huge proportion of non-

English-speaking immigrant students, about 45% of the students in the district had limited or no English-language skills. California was one of many states in 1999 that had prepared to replace social promotions with new, stringent academic standards designed to lift student academic achievement, but new standards proved so high that the state risked a disastrous increase in retention and/or drop-out rates, and many school districts followed the example of Los Angeles schools by ignoring the new standards or by lowering passing scores to levels that matched student academic achievement. California was not alone. Only one of 10 Arizona high school students passed its new state math exam in 1999, and the state was forced to promote all the students who failed. Only 7% of students in Virginia met its new standards, and the state had to grant social promotions to most of them. Massachusetts and New York had similar experiences.

Although social promotion undoubtedly contributed to part of the decline in national drop-out rates, compensatory education almost certainly helped tens of thousands of students who might otherwise have quit school to complete their education. The only apparent failure of compensatory education was with children of Hispanic origin. Although drop-out rates among such children declined from a high of more than 35%, they remained stubbornly elevated at 21.5% in 2002, and critics complained that compensatory education had failed to deal with all factors putting students at risk. Compensatory education at school, for example, seldom deals with or alters the effects of a student's home and neighborhood environment.

In 1965, the government's Office of Economic Opportunity also established Operation HEAD START to prepare deprived preschoolers for kindergarten by teaching them school-readiness skills and providing social, medical, nutritional and psychological support. Head Start has affected about 20 million economi-

cally deprived children. Some studies showed that Head Start children had significantly higher success rates in later schooling. As a result, they were far better able eventually to find and hold jobs than children without similar early education benefits. Other studies have found that for at least some children the benefits of Head Start begin to fade by the end of second grade—possibly because of the lack of adequate comparable compensatory programs to carry on the work of Head Start in later grades. The 1965 Elementary and Secondary Education Act and the subsequent 1981 Education Consolidation Improvement Act extended some of the academic benefits of Head Start to older children by providing funds for remedial reading, remedial mathematics and special summer programs. But the programs reach only half the number of children in Head Start and provide none of the social services.

Some communities have alternative schools to provide compensatory education and counseling to at-risk students. Although most have had mixed results and are still experimenting with a variety of approaches for teaching at-risk students, all can report dramatic results for many individual students. Most alternative schools rely on small classes, special tutoring and establishment of close, supportive one-to-one mentor-student relationships involving either a teacher or counselor.

attendance The physical presence of students on school premises or off premises at an officially sanctioned school activity such as independent study, work-study, athletic contests, off-campus academic or cultural activities and approved classes for home-bound students. For the student, failure to attend means a break in the continuity of his or her studies. For public schools, however, attendance is a vital element of their finances. All states allocate educational funds to school districts on the basis of AVERAGE DAILY ATTENDANCE at the

schools in each district. For that reason, all states have passed attendance laws specifying the minimum number of days and hours schools must remain open each year, the minimum age at which students may drop out of school and other regulations affecting attendance.

To enforce those laws, most schools and school districts have attendance officers on the school staff to identify absent students as early in the day as possible, determine the reasons for their absence and, if warranted, take remedial action. Some communities used to assign the task of enforcing school attendance to a police "truant officer" who had the authority to take truant children into custody and arrest parents. Attendance officers can file legal complaints against parents in court or obtain help from social welfare authorities and police if they believe parental failure to ensure a child's regular attendance at school borders on neglect. Most attendance officers, however, attempt to provide counseling for chronically absent students and, if necessary, for their parents. If that fails, they may order a student transferred to an ALTERNATIVE SCHOOL for troubled students.

About 8% of all students are absent from school on each of the 178 days of the average school year in the United States, while 9% of those who appear at school fail to appear at one or more classes each day. The absentee rate varies according to the socioeconomic status of students and the type of school. Absenteeism for students in the poorest socioeconomic quartile of families averages more than 11%, but often reaches above 50% at some inner-city schools. In contrast, absenteeism for students from the two middle socioeconomic quartiles average slightly more than 7%, while absenteeism for students from the top quartile averages less than 5.5%. Student absenteeism averages almost 10% at public schools and just over 5% at private schools. The attendance figure for public schools has improved steadily since the

beginnings of universal compulsory education in the 19th century. The 1870 census found attendance rates at just under 60%. They reached 75% in 1920 and 90% in 1960.

School enrollment rates figures have changed even more dramatically, largely the result of strict child-labor laws that limit the hours children under 18 may work each week. In 1870, only 57% of the population age five to 17 was enrolled in school, and only 1.2% attended high school. Although almost 70% of seven- to 13-year-old children attended elementary school by 1910, only about 5% of 14- to 17-year-olds were enrolled in high school. By 1940 the percentage of students enrolled in elementary school had climbed to just over 95%, and 79.3% of children 14 to 17 years old attended high school. In 1997, when 99.1% of all children attended school, 96.6% of children 14 to 17 years old attended high school. The percentage of children enrolled in school has diminished since then—largely because of HOME SCHOOLING, whose enrollment tripled from 2000 to 2005 and now absorbs nearly 1.5 million students from school systems.

attendance area The geographic area served by a public school. Inapplicable to private schools, attendance area has become an obsolete administrative concept in areas of the country where parents have been given the option of choosing out-of-district school for their children or where courts have ordered cross-district busing to promote racial segregation.

attendance register A daily log maintained by teachers and staff to record the presence, tardiness or absence of every student in school and used to calculate the AVERAGE DAILY ATTENDANCE. Depending on the school, the attendance register may also include specific data for each student, such as name, date of entry or transfer to the school, date of birth, gender, home address and telephone, parents' daytime

telephone numbers and cumulative data of days present and so on.

attention deficit disorder (ADD) A chronic inability to concentrate. Often called ATTENTION DEFICIT HYPERACTIVITY DISORDER, ADD is a puzzling, often frustrating disorder, which may evince itself among young school children in inability to pay attention, difficulty listening, fidgeting, squirming, running around the room, low frustration tolerance, argumentativeness, sudden impulsive acts, frequent and unpredictable mood swings, avoidance or withdrawal from group activities, excessive time in completing routine tasks or, in sharp contrast, falling asleep. Children with ADD are unable to pay attention in class, sit still, be quiet, act cooperatively or concentrate on their academic work, and they invariably fall behind.

ADD, however, remains a controversial syndrome for which there are no diagnostic tests. Almost every healthy child experiences symptoms of ADD from time to time—younger children more than older ones, boys more so than girls, and eight- to 10-year-olds more often than any other age group. Boys account for 80% to 90% of all ADD cases. How long and how severe each outburst becomes, how it affects the child's long-term academic performance and how the affected adults respond seem to be keys to its treatment and resolution. ADD invariably draws immediate attention from teachers and parents, and troubled children may unconsciously display symptoms of ADD for that purpose. Teachers often label restless children as having ADD to shunt them into special education classes, thus ridding conventional classes of the most difficult and disruptive children and restoring total teacher control in the class. Schools, too, profit from ADD, which entitles each school to hundreds of dollars in federal grants for each child assigned to special education. ADD is classified

as a disability under the federal INDIVIDUALS WITH DISABILITIES EDUCATION ACT. Parents also often grasp at the ADD label as a simple explanation for their own inability to cope with the problems of growing children and, in the case of parents on welfare, a way of obtaining additional government subsidies under the Individuals with Disabilities Education Act.

Many pediatric neurologists and psychiatrists maintain that ADD has become promiscuously overdiagnosed. The result, according to pediatric neurologist Fred Baughman, writing in the *Journal of the American Medical Association* in 1993, is that some perfectly healthy children are receiving drugs they do not need and growing up believing "they have something wrong with their brains that makes it impossible for them to control themselves without using a pill. . . ."

True long-lasting ADD probably occurs in well under 3% to 5% of the population, although ADD claims reached 11% after the AMERICANS WITH DISABILITIES ACT of 1990 included ADD as a disability that qualified for repayment for lengthy and costly testing. Some testing groups, which often stand to profit from their research, claim that 33% of all children suffer from ADD. Even the respected Yale (University) Center for the Study of Learning and Attention insists that ADD and attention deficit/hyperactivity disorder (ADHD) afflict 15% to 20% of American children or 12 million to 16 million. About 6 million children—11% of the total elementary and high school enrollment—received behavioral drugs such as Luvox and Ritalin (methylphenidate) to control ADD and other behavioral problems in 2005. Moreover, between 1.0 and 1.5% (depending on the particular study) of preschoolers two to five years old were also receiving drugs to control ADD or ADHD in 2000.

For true ADD and ADHD, with no complicating psychological factors, researchers assembled by the National Institutes of Health have

found Ritalin the most effective therapy—far more effective than BEHAVIOR-MODIFICATION therapy alone and even more effective than a combination of Ritalin and behavior modification therapy. Seventy percent of true ADD and ADHD cases, however, also exhibit psychological problems such as depression and anxiety, and, in those cases, the most effective treatment was a combination of Ritalin and behavior-modification therapy.

Such studies, however, have no bearing on the contention of many educators that teachers, counselors, school administrators and parents are grossly overdiagnosing normal boys with ADD and ADHD and, in effect, pathologizing normal, active, mercurial boyhood behavior. The number of Ritalin prescriptions to school-aged children increased 2½ times from 2000 to 2005 to more than 6 million, despite the drug's dangerous side effects—especially in normal children who do not need it. Although Ritalin is a stimulant, it has the paradoxical effect of calming preadolescent children, but its pharmacological effects and addiction patterns are similar to those of cocaine, to which it is related. Indeed, more than 500,000 school-aged children were found abusing the drug in 2005. A few educators and psychiatrists grew so alarmed by the increase in the use of such drugs that a number of state boards of education issued directives discouraging its use and urging teachers to emphasize behavior management. In fact, no accurate statistics for ADD exist, because their symptoms come and go in almost every normal, healthy growing boy and, more often than not, vanish with maturation (and discipline)—before testing can be arranged or completed. With testing costs well above \$1,000, a number of organizations have built huge staffs and treasuries by encouraging parents and schools to test every child who might seem to exhibit symptoms of the disorder.

Where chronic ADD does indeed exist, it may be emotional, developmental or neuro-

logical in origin, or it may be associated with a wide range of minor physical problems such as food allergies, visual or auditory disorders or normal growth spurts. Very rarely, ADD may also be associated with serious physical problems such as brain damage, biochemical imbalances, infectious diseases, mental illness and other serious illnesses that make appropriate medications necessary. The normal diagnostic route for students with ADD is a combination of intensive counseling and a thorough physical examination.

(See also HYPERKINESIS.)

attention deficit hyperactivity disorder (ADHD) A chronic inability to concentrate, marked by excessive impulsivity and hyperactivity. Causes are not dissimilar to those of conventional ATTENTION DEFICIT DISORDER, with one exception: ADHD has a statistically significant correlation with DYSLEXIA and math disabilities (MD). One study found that 33% of dyslexic or MD children had ADHD.

attention span The length of time an individual can concentrate on an activity. Attention span increases with age, visual and auditory acuity, language skills, intellectual level, motivation and interest. Emotional, physical, psychological difficulties and mental deficiencies all shorten attention span.

attitude A psychological, intellectual or emotional position that predisposes an individual to think or act in a predictable way. Whether temporary or enduring, attitudes are all learned and, therefore, of enormous consequence to educators seeking to imbue students with a wide range of positive attitudes toward learning, ethical and moral conduct, love of school, family, friends and country.

attitude scales Tests designed to measure attitudes by measuring responses to a series of

statements. The two most common methods are the Likert and Thurstone scales. The Likert attitude scale permits test takers a range of responses to each question: strongly agree, agree, undecided, disagree and strongly disagree. The Thurstone scale asks test takers to check those statements with which they agree and leave the other questions unanswered.

audiolingual instruction A method of teaching that depends exclusively on speech and visual demonstration, with no written materials. It is through audiolingual instruction, in effect, that children learn to speak their native tongue long before they learn to read or write. Long in use in Europe, audiolingual instruction did not find its way into American schools until after World War II. Initially, it was used to teach foreign languages to elementary school-aged children of American civilians and servicemen stationed with their families overseas. Often called the aural-oral approach, it remains the basic technique for teaching foreign languages to elementary school children.

(See also FOREIGN-LANGUAGE STUDY.)

audiologist In education, a specialist in testing, diagnosing and designing appropriate educational and counseling programs for hearing-impaired children.

audio-tutorial instruction A three-part, lecture-free instructional system that combines small seminars, large assemblies and audiocassettes to guide students through a course of independent study. Devised in the 1960s by botanist S. N. Postlethwait for college and university students, audio-tutorial instruction relied on audiocassettes to detail what the student must do to complete his or her independent study, including the required observations, reading, films, visits to other laboratories and experiments to conduct.

The approach is devoid of lectures, and students must obtain all the knowledge independently. Postlethwait used the general assembly of all his students, not to lecture, but to give general instructions and details on techniques to use in one's independent study. The small, weekly assembly sessions, or seminars, grouped eight to 10 students to test each other and respond to unexpected questions with short, but detailed lectures.

audiovisual aids Any of a wide variety of sound and projection devices used by teachers to engage as many student senses and faculties as possible in the learning process. Among the more modern audiovisual aids are tape and audiocassette players, slide and film projectors, closed circuit and cable television, computers and associated CD-ROMs and DVDs, and computers with one- and two-way telecommunications links that permit viewing textual, graphic, still and filmed materials. Designed to supplement materials from textbooks, lectures and the blackboard, audiovisual aids date back to 1696 and the magic lantern, a device that used candlelight to project pictures from transparent glass slides. Usually drawn by hand, magic lantern slides were used in classrooms for the next two centuries to illustrate the uninterrupted prose in textbooks and lectures. The 19th century saw a host of new visual aids introduced—models, diagrams, charts, graphs, cartoons, posters, maps, globes, sand tables, blackboards, display cases and dioramas. With the invention of photography and recording, photographs, slides and films were added.

(See also ADAPTIVE PROGRAMMING; COMPUTER-ASSISTED INSTRUCTION; LANGUAGE LABORATORY; PROGRAMMED INSTRUCTION; TEACHING MACHINE.)

audiovisual listening center An area of a kindergarten or early elementary school classroom equipped with books, tapes and headsets, a television and/or videocassette recorder

for children to listen or watch pretaped stories and educational materials.

audit Attendance in a course, usually at college or university, without credit or grades. Students who audit courses usually do not have to participate in activities normally needed for credit, such as examinations and class assignments. Students usually audit courses either because of deep personal interest or because they need a limited body of knowledge for which they do not want to or cannot commit the time or energy required for taking a course for credit. Auditing requires permission of the college and the instructor. The word “audit” usually appears on student transcripts.

auditory discrimination The ability to differentiate between the varying sounds and frequencies of vowels, consonants, syllables and words. Poor auditory discrimination can result from developmental differences or neurological damage. A common symptom among the elderly, poor auditory discrimination in early childhood can slow development of articulation and language skills. There are many auditory discrimination tests designed for every age group.

auditory memory span The length of time an individual can remember something heard. Development of the auditory memory span in the classroom is essential for academic achievement, and teachers at all levels try to teach students at an early age a wide variety of methods for improving auditory memory span. Among the many devices they use are rhymes, word games, silly sentences, mnemonics, startling visual associations, oral drills and silent periods for students to concentrate entirely on a gradually increasing number of teacher declarations.

auditory training Instruction of the hearing impaired to understand sounds and speech.

Usually involving the use of auditory amplification devices, auditory training includes teaching the hearing impaired how to listen by watching lip patterns as others speak. Auditory training may also include counseling.

augmented alphabet An alphabet of 45 characters and combinations of characters to teach young children the sounds of the English language as well as the names of letters in the alphabet. Developed in 1959 by Sir James Pitman, the grandson of the inventor of the Pitman shorthand system (see **SHORTHAND**), the augmented alphabet (or Roman Augmented Alphabet, as he called it) is printed on large cards that display not only individual letters of the alphabet but basic combinations thereof. Together these correspond to the 27 consonant sounds, 17 vowel sounds and the letter *y*. Also called the **INITIAL TEACHING ALPHABET**, or *i.t.a.*, the combination sounds such as *th* are displayed as digraphs, with the letters partially overlapping, to distinguish the aural from the written alphabet.

(See also **ALPHABET**; **PHONICS**.)

aural learning Learning by listening. Aural learning is the way infants learn language skills during preschool years and is essential to the development of learning readiness and reading and writing skills in the early school years.

authoritarian teaching A method of teaching based entirely on teacher lectures and allowing for no classroom discussion. Grades are based entirely on student ability to reproduce rather than interpret lecture and textbook material in exams.

authority A vested or implied power to command the obedience of others. Essential for effective education at every level, authority in schools, colleges and universities and in individual classrooms is established in many ways—by establishing warmth, respect and

even love in students for the institution, the individual teacher and each other; by establishing respect through demonstration of superior, expert knowledge; by the promise of rewards; by the fear of punishment. Exercising teacher authority should not be confused with AUTHORITARIAN TEACHING which is based on lectures alone and allows for no classroom discussion.

autism A multiple handicap affecting a child's mental, emotional and physical processes by age five and sometimes from birth. Although its causes remain unknown, it is believed to involve some sort of physical damage to the brain or neurological system—or both. Federal laws relating to handicapped children classify autistic children as both “emotionally disturbed” and “health impaired.” Usually uneducable in the conventional classroom setting, the typical autistic child tends to be aloof, disinterested, withdrawn, occasionally impulsive, and irrationally fearful at the sight of new objects. Autistic children respond only to certain sounds or voices and have extreme difficulty speaking and making coordinated body movements. They develop few social skills, cannot play with other children, and have difficulty understanding what is said to them. Among the many typical symptoms are refusal to make eye contact, repetitive behavior such as head banging or hand flapping and a preoccupation with unusual activities or interests. Half a million Americans suffer from the disorder. Massive, combined intervention, including educational and behavioral therapy by doctors, teachers, psychotherapists, social workers and parents and other family members, has produced few encouraging results in helping autistic children improve their abilities to function intellectually, emotionally or socially. A dozen different efforts with hormone therapy sponsored by the National Institutes of Health have also proved ineffective. Although some forms of intensive

individual psychosocial and physical therapy have helped some patients, two-thirds of autistic adults cannot live independently.

autodidact One who educates himself by studying all or most of a conventional curriculum independently. Autodidacts were common in the United States prior to compulsory universal public school education, when only the sons of the wealthy could usually continue their education past primary school. BENJAMIN FRANKLIN'S *Autobiography* urged Americans without the opportunity to attend formal schools to educate themselves. Franklin was himself an autodidact, as was Thomas Paine, who believed, “Every person of learning is finally his own teacher.” Among the most famous American autodidacts were steel magnate/philanthropist ANDREW CARNEGIE, inventor Thomas A. Edison and HORACE MANN, the “father” of American public schools. Mann educated himself by reading and memorizing all the Greek, Latin and English books in the Franklin, Massachusetts, town library during his teenage years prior to matriculation at Brown University, from which he graduated as class valedictorian.

automated speech Computer-produced words that simulate the sound of the human voice. Used as an integral part of computer-controlled programmed instruction, automated speech replaces the teacher in routine drills in language and other instruction in which the student has a choice of several responses. Automated speech tells the student, “That's right” or “That's wrong, try again.”

automaticity The voluntary performance of a task without conscious thought, such as walking. The educator's task is to help students achieve automaticity in reading, writing one's thoughts, calculation and other skills. A child's need to “sound out” the letters before pronouncing a word shows a normal, developmental lack

of automaticity. For an older child or adult to voice each word that is read can indicate a lack of automaticity that can impede academic achievement.

auxiliary services In education, the ancillary school functions of noninstructional personnel. The personnel offering such services may be highly trained professionals such as nurses, librarians, remedial teachers and therapists, or they may be noncertified, semiskilled workers such as cafeteria workers, bus operators and janitors.

average daily attendance (ADA) A statistic used by schools and school districts for determining the amount of funding due from the

state each year. Computed from data recorded in school ATTENDANCE REGISTERS, the ADA is calculated by dividing the total number of student attendance days during the entire school year by the number of days the school was open. The average daily absence is calculated by dividing the total number of student days of absence during the school year by the number of days the school was open and functioning.

average daily membership (ADM) A statistic used to determine allocation of teachers and school equipment within a school district. The ADM measures district size by dividing the total number of student enrollment days at a school or district by the number of days the school is open and functioning.

B

baccalaureate A term meaning “bachelor,” but with multiple meanings in education. In the United States, it may refer to the BACHELOR’S DEGREE obtained upon successful completion of a four-year college education, to the ceremony at which the degrees are awarded or to the speech delivered when conferring such degrees. In France and many other countries, the baccalaureate is the degree required for admission to university and granted upon successful completion of secondary school education and corollary comprehensive examinations. Probably derived from the French *bas chevalier*, or first stage of knighthood, it evolved into the French word *bachelier*, or “bachelor.” It was then Latinized as baccalaureate, because Latin was the language of scholars throughout Europe until the 19th century.

bachelor’s degree A certification by an institution of successful completion of four years of college academics. The two most common bachelor’s degrees are the Bachelor of Arts (B.A. or A.B., for the Latin *artium baccalaureus*), for work in the humanities, and Bachelor of Science (B.S.). Some colleges offer bachelor’s degrees in specialized areas—for example, Bachelor of Music (B.Mus.), Bachelor of Education (B.Ed.), Bachelor of Engineering (B.Eng.), and so on.

back-to-basics An educational movement and a curriculum stressing a return of American

public schools to a fundamental core curriculum based on English, mathematics, science and history and at the same time elimination of so-called educational “frills,” such as home economics and other personal improvement courses. Launched in the early 1970s, its roots lie in the early 20th-century “essentialism” movement that educator WILLIAM CHANDLER BAGLEY developed in opposition to the PROGRESSIVE EDUCATION movement of JOHN DEWEY.

Back-to-basics advocates would reinstitute strict classroom discipline and give primary and secondary school students little or no choice over what courses they would study. Although there are widespread differences regarding which courses constitute the required basics, they generally include those that provide basic academic skills such as reading, writing, spelling, punctuation, penmanship, a range of calculation skills, history and civics, biology, chemistry and physics. Some back-to-basics advocates also include music and art in their suggested core curriculum.

Proponents of back-to-basics also condemn OPEN EDUCATION and “cafeteria-style” curricula that offer students a wide choice of personal-improvement courses such as human interpersonal relations and “soft” academic courses such as media studies. Back-to-basics proponents also call for elimination of the GENERAL EDUCATION track, in which 25% of the credits are earned for physical and health education,

work experience outside the school, remedial math and English and “personal service and development” courses.

Bacon, Sir Francis (1561–1626) English philosopher, essayist, barrister, member of Parliament and counsel to the crown, whose *The Advancement of Learning* established new guidelines for education in England and the American colonies.

Along with Thomas More and DESIDERIUS ERASMUS, BACON helped revive the Platonic spirit of inquiry that centuries of Christianity had crushed with the tenet of clerical infallibility, the New Testament story of the temptation and fall and the Old Testament dictum “in much wisdom is much grief.” Bacon’s work marked the beginning of the end of clerical control of university education and its eventual takeover by humanists.

Bacon went further than either More or Erasmus, however, by declaring, “I have taken all knowledge to be my province.” Like most 16th-century and early 17th-century humanists, neither More nor Erasmus had completely abandoned the traditional contention originally propounded by Saint Augustine that scholarship is a “vain and curious longing” and a “lust of the eyes.”

Nevertheless, both More and Erasmus agreed that nature and the universe were God’s creation and that to study and know them is to know God better. Their humanism was still deeply rooted in religious belief. Bacon’s humanism, while never a religious, was grounded more in the potential benefits of knowledge to man, and together with the works of ROGER ASCHAM and others, became the basis of early American education.

Bagley, William Chandler (1874–1946) American educator, author, educational philosopher and antagonist of JOHN DEWEY’S PRO-

GRESSIVE EDUCATION movement. A prolific author and editor of six different journals of education and educational psychology, Bagley founded the ESSENTIALISM movement, which eventually spawned the contemporary back-to-basics movement.

A midwesterner by birth and a product of the Midwest’s practical, farm-belt universities, he taught in a one-teacher school in rural Michigan before becoming a principal in St. Louis, Missouri, in 1901. No theoretician, he learned teaching as a doer, moving to Dillon, Montana, in 1902, to serve four years as superintendent of public schools and professor of pedagogy and psychology at the State Normal School.

He spent the next two years as superintendent and professor of teaching methods at the State Normal and Training School in Oswego, New York. In 1908, he became professor of education and director of the University of Illinois school of education. There he gained a national reputation with the publication of his first books on education. In 1917, he joined John Dewey at Teachers College, Columbia University, in New York, where he remained for the next 23 years.

Bagley believed firmly in strict classroom discipline, rote learning and total mastery of basic facts he considered essential to success in adult life. He believed in a core curriculum that taught all students basic skills and a knowledge of American history and culture. He was a pioneer in education by RADIO. Despite his conservative approach to education, he was an ardent proponent of equal educational opportunity, regardless of race, religion, ethnicity or gender.

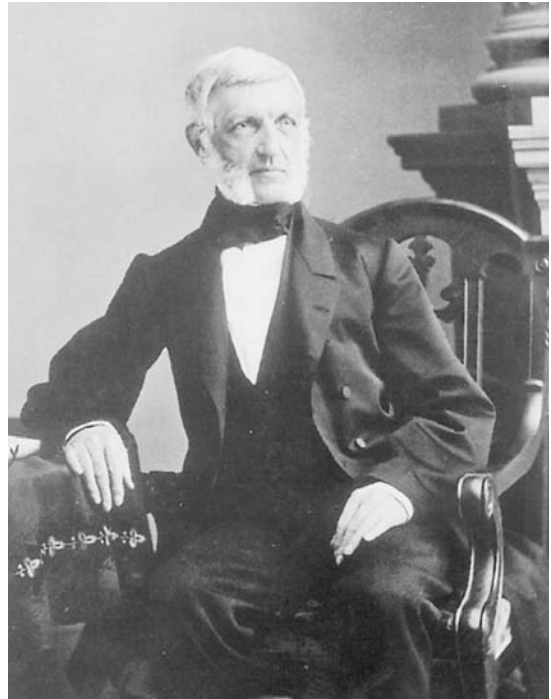
His books included *The Educative Process* (1905), *Classroom Management* (1907), *Craftsmanship in Teaching* (1911), *Educational Values* (1911), *School Discipline* (1915), *Education, Crime, and Social Progress* (1931) and many others. He was editor of the *Journal of the*

National Education Association (1921–24), *School and Society* (1939–1946), *Educational Administration and Supervision* (1917–46) and coeditor of *Journal of Educational Psychology* (1910–17).

ball-stick-bird A system of teaching the alphabet by using three basic forms—an oval (ball), a line (stick) and an angled V (bird)—from which all the letters of the alphabet can then be formed by adding one or more balls, sticks or birds. Made up of two series of five books each for students and a teacher’s manual, the system was designed in the early 1970s for the retarded, but is equally practical for teaching preschool children to read.

Bancroft, George (1800–1891) American educator, historian and statesman who, as secretary of navy under President James Knox Polk, presided over the founding of the UNITED STATES NAVAL ACADEMY, at Annapolis, Maryland, in 1845. In 1834, he completed the first of his 10-volume *History of the United States*, the first comprehensive, thoroughly researched history of the United States from earliest colonial times to the end of the Revolutionary War. Written over a span of 40 years, from 1834 to 1874, the work earned him the epithet “father of American history.”

Massachusetts-born and a HARVARD COLLEGE graduate, he turned down an opportunity to teach there in favor of joining Joseph Cogswell in founding the private, experimental Round Hill School, in Northampton, Massachusetts, in 1823. Round Hill was the first U.S. school based on the then-admired German GYMNASIUM model, which trained the body as well as the mind in the belief that physically fit young men performed better academically than the unfit. In addition to introducing physical education into the curriculum, Round Hill was the first true BOARDING SCHOOL, in that out-of-town students lived on campus rather than with local families. Unfortunately, the school’s



George Bancroft (Library of Congress)

discipline proved unpopular and Round Hill ended in failure eight years later.

Bancroft then plunged into Massachusetts and Democratic political life. He was appointed collector of the Port of Boston in 1838, navy secretary in 1845, minister to England in 1846 and minister to Prussia and then the German Empire, from 1867 to 1874.

Bank Street College of Education An independent, graduate education college, founded in 1916 in New York City as an experimental center to improve education. The college is coeducational and offers master’s degree programs and nondegree programs for a variety of work with students in educational settings. It also operates the School for Children (popularly called the Bank Street School) for 435 chil-

dren, 3 to 13 years old, and the Family Center, for infants and toddlers as young as nine months. The school and center provide students of early childhood education with opportunities for studying and interacting with children, parents and teachers. About 3,000 educators from around the world visit the college and its school each year. The college has about 900 students and requires a bachelor's degree for admission. (See also LABORATORY SCHOOL.)

Baptists Protestant Christians whose faith evolved from 17th-century Puritanism and Congregationalism, and is rooted in the belief that "conversion"—the deep, spiritual embrace of and commitment to Christianity—must precede Baptism. Moreover, just as conversion embraces the entire human spirit, baptism must immerse the total body.

There is no single Baptist Church. Like other religious groups, they sent missionaries fanning across North America to convert non-Baptists during the colonial era and during the peak of EVANGELISM and the MISSIONARY EDUCATION MOVEMENTS of the 19th century. Their churches were the common schools of the colonial communities in which they settled and their ministers the only schoolmasters. The earliest remaining educational institution they founded was Rhode Island College, which the Rev. James Manning began in the parsonage of his church in Warren, Rhode Island, in 1764. The college moved to Providence in 1770 and later became Brown University.

By 1850, Baptists were the second largest denomination in America, after the Methodists. The more than 9,500 Baptist churches made up about one-fourth of all the churches in the United States. As it did in other churches, the debate over abolition split the Baptists into three groups: the northern abolitionists, the southern whites who favored slavery, and the southern blacks, who would be separated from their white coreligionists for more than a cen-

tury thereafter. The wounds of the Civil War have yet to heal, and the Baptists remain divided by race in many areas of the country and by conservative and liberal social and political views.

Like other religions, the Baptists' influence on education diminished after disestablishment of churches in the United States in the early 19th century and the growth of state-controlled public school education and colleges following the Civil War.

Barenblatt v. United States A 1959 United States Supreme Court decision that upheld the constitutional right of congressional committees to conduct investigations in the field of education.

The ruling upheld the conviction for contempt of Congress of Lloyd Barenblatt, a graduate student and teaching fellow at the University of Michigan and a psychology instructor at Vassar College. Barenblatt had refused to answer questions from members of a House Un-American Activities Subcommittee investigating Communist influence in higher education.

Instead of invoking the Fifth Amendment (against self-incrimination), Barenblatt challenged the committee's right to inquire into his personal beliefs and associations, claiming that the inquiry had no valid legislative purpose (presumably the reason for all committee inquiries) and was an infringement of academic freedom. Although agreeing that academic freedom must be protected, the Court said that Congress was not "precluded from interrogating a witness merely because he is a teacher," and that the government's "right of self-preservation" against the threat of communism was a valid legislative purpose for its inquiry.

Barnard, Frederick A[ugustus] P[orter] (1809–1889) American educator and for 25 years president of Columbia College and

responsible for its growth and expansion into a university. Born in Massachusetts, he graduated from Yale College in 1828 and taught there until 1831, when his own increasing deafness interested him in teaching the deaf. From 1831 to 1837, he did just that, first in Hartford, Connecticut, and then New York City.

A professor of mathematics, chemistry and physics, he taught at the University of Alabama (1848–54) before accepting the presidency of the University of Mississippi in 1856. He resigned in 1861 because of his opposition to slavery and three years later was invited to become president of Columbia, when it was a small college of about 100 male students. By



Frederick A. P. Barnard (Library of Congress)

the time he died, Columbia University had grown to more than 2,000 students.

Originally a staunch conservative, he became one of the most innovative 19th-century American college presidents. He introduced the concept of elective courses for the last two years of undergraduate education and developed common examinations for college entrance. He expanded the curriculum and established graduate and professional departments and schools, including the famed Teachers College. Originally an opponent of college education for women, he reversed himself and fought his board of trustees over the issue of coeducation. In 1883, he established a women's department, which became Barnard College in 1889—unfortunately, six months after his death.

Barnard was also a prolific author. Editor of *Johnson's Cyclopaedia* (1872), he wrote books on teaching arithmetic and grammar, on student government, on industrial education and on science. He wrote a history of the United States Coast Survey. He was a founder of the National Academy of Sciences and president of the American Meteorological Society and other scientific groups.

Barnard, Henry (1811–1900) Pioneer American educator responsible for founding the public school systems of Connecticut, Rhode Island and Wisconsin. Born to a wealthy family in Hartford, Connecticut, Barnard graduated from Yale College, trained for the law and then spent a year in Europe, meeting such leading philosophers, writers and educators as Thomas Carlyle, William Wordsworth, PHILLIPP EMANUEL VON FELLEBERG and JOHANN HEINRICH PESTALOZZI. Together, they imbued him with a sense of mission to ensure universal public education in the United States.

Elected a Whig member of the Connecticut legislature when he returned in 1837, he immediately sponsored a variety of laws to improve the lot of the blind, the deaf, the insane, the

poor and the imprisoned. Then, emulating the work of HORACE MANN in Massachusetts, he sponsored a model school bill establishing a statewide public school system to provide universal, compulsory education. Unlike Horace Mann's call for free schools, however, Barnard proposed a system for which parents would pay according to their means—a forerunner of the property-tax system now used to pay for public schools.

Barnard's motives differed from Mann's as well. An advocate of practical education—bookkeeping, surveying, mechanics, and so on—Barnard saw universal education as a means of providing industry and agriculture with skilled work forces that would maintain the nation's parity in international commerce.

Barnard ran into considerable opposition from those who opposed equal educational rights for women. Barnard also antagonized the landed gentry of his era by proposing an

end to private academics, which he said created class distinctions that would lead to European-style conflicts between the laboring and propertied classes. He saw public schools as a way of teaching poor and rich alike a universal, common love of country that would prevent the Marxist-inspired revolutions then taking place in Europe from spreading to the United States.

In 1838, the Connecticut legislature finally yielded and established a State Board of Common Schools, which he was named to head. His acceptance marked the end of his life as a politician and the beginning of his career as an educator. To staff Connecticut schools, Barnard founded teacher training institutes, before moving to Rhode Island in 1843, to establish a public school system and a teacher training school in that state. After seven years, he returned to his home in Connecticut and once again took charge of the state's school system.

In 1854, he founded the *American Journal of Education*, which under his 27-year editorship would grow into a massive, 32-volume encyclopedia of education that was not only the world's first such encyclopedia but remains the definitive work on 19th-century education. In addition to his work on the journal, he was author of about a dozen books, including *School Architecture* (1849), *National Education in Europe* (1854), *American Pedagogy* (1860), *Science and Art* (1871), *Pestalozzi and His Educational System* (1874) and *English Pedagogy* (1876).

In 1859, he accepted the chancellorship (presidency) of the University of Wisconsin and helped found 14 teacher training institutes as a prelude to building the state's public school system. In 1865, he became president of St. John's College in Annapolis, Maryland, with the hope of establishing a public school system in that state. The opposition was too strong, however, and a year later he accepted a presidential appointment as the first U.S. commissioner of education in Washington, D.C. He



Henry Barnard (University of Wisconsin–Madison Division of Archives)

spent the next year organizing what would eventually (in 1979) become the U.S. Department of Education. He then retired to Connecticut and spent the next three decades writing on education, occasionally venturing out of state to lecture on the benefits of public schools.

Barnard College A private, nonsectarian college founded as a college for women in 1889 by the trustees of Columbia University in New York City. The founding of Barnard represented a compromise between the trustees and Columbia University president FREDERICK A. P. BARNARD, who vehemently advocated enrolling women into the all-men's Columbia College. He did succeed in establishing a women's department in 1883. Barnard died six months before the department he founded was reorganized as a college named in his honor. Now affiliated with Columbia University, Barnard remains an independent four-year college offering B.A. degrees in a wide range of arts and sciences to nearly 2,300 students. Barnard and Columbia University students have cross-registration privileges in all courses.

Barnum, Phineas Taylor (1810–1891) A shrewd entrepreneur, impresario, showman and, coincidentally, a major force in early 19th-century education and the development of the American MUSEUM as a conduit for education. Known today as a circus operator, Barnum did indeed begin his varied career as an itinerant showman, exhibiting such curiosities as an elderly black woman who claimed to be the 161-year-old former nurse to George Washington.

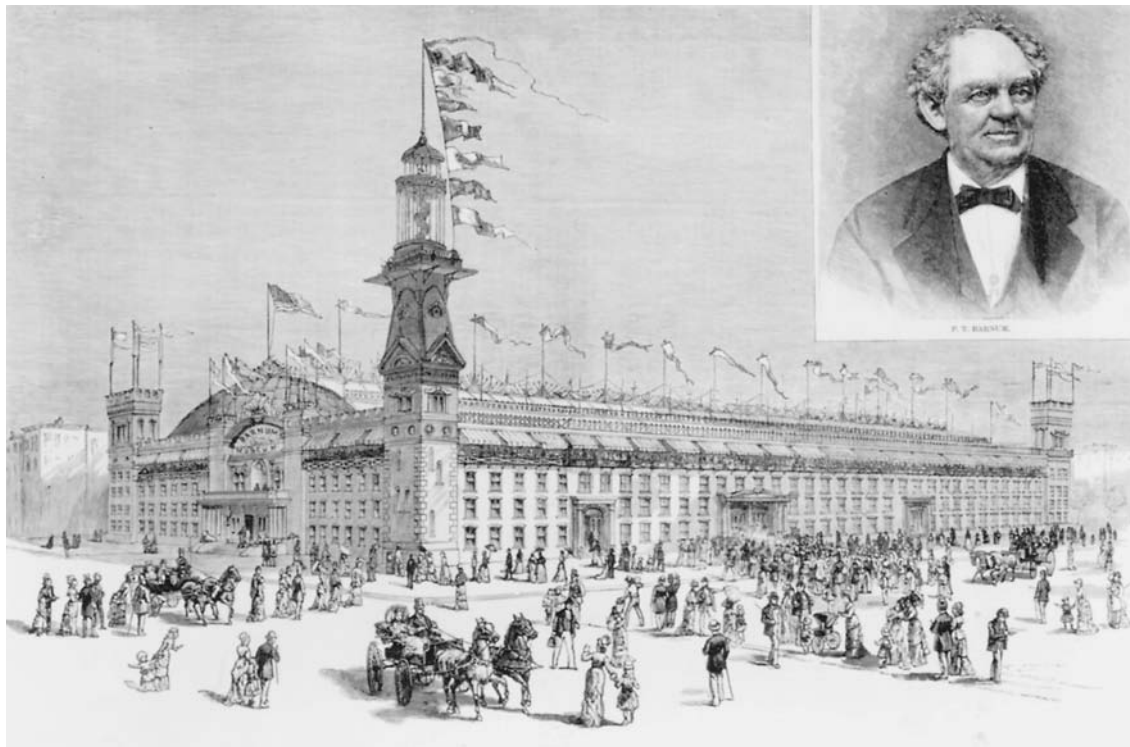
Born in Bethel, Connecticut, he had little formal education and went from job to job during his early years—clerking in a store, selling lottery tickets, editing a newspaper and, by the time he arrived in New York in 1841, managing entertainment troupes. At the time, New York's only two museums—Peale's Museum and the American Museum—were on the brink of clos-

ing. The two institutions were essential educative institutions in New York. The first public schools were only just then opening, in Connecticut, and most Americans relied on the AMERICAN LYCEUM movement, periodicals, libraries, fairs and museums for education. Fairs and museums were particularly popular. Fairs added practical education (agriculture, cooking, etc.) to a core of entertainment, while museums did the opposite, adding entertainment (dinosaur bones and the like) to a core of educational materials.

Barnum acquired and merged New York's two museums into a new, single institution, Barnum's New American Museum. He expanded the permanent collections of natural history specimens, stuffed animals, inventions of the industrial revolution and fine art as the core of the museum. He then added huge new viewing galleries with dioramas and dissolving views. He built auditoria for visitors to listen to spell-binding lecturers, singers, concerts, plays and other attractions.

Moreover, he added what he called "transient attractions"—performing dogs, jugglers, ventriloquists, albinos, giants and Indians who performed war dances—all intended to amaze as well as educate. He traveled the world to find attractions that would earn profits from public curiosity about the unusual. He found and displayed Chang and Eng, the Siamese twins, and General Tom Thumb, a midget only 25 inches tall, who attracted 20 million visitors. When he failed to find the unusual, he produced fakes such as the Feejee Mermaid. Fake or real, the exhibits at Barnum's popularized the museum by attracting 82 million visitors and assuring its role as a fixture in the broad picture of American education. Indeed, Barnum taught curators of future museums the necessity of making even their most serious exhibits entertaining.

Fires twice destroyed Barnum's museum. Each time, he rebuilt it bigger than before. In 1868, however, he set out on the career for



Architect's rendering of Phineas T. Barnum's (inset) New Museum, at Madison Square in New York City (*Library of Congress*)

which he is best remembered today—a circus showman, in partnership with James A. Bailey. In 1882, he purchased a huge six-and-a-half-ton elephant from the Royal Zoological Society. He called it “Jumbo,” probably derived from a mispronunciation of the Swahili word of greeting, *jambo*. The name *Jumbo* entered the English language as a new word for extra big. True to form, Barnum exhibited Jumbo as the world's only surviving mastodon. Jumbo's skeleton can still be seen periodically in the AMERICAN MUSEUM OF NATURAL HISTORY in New York, which acquired a number of other specimens from Barnum's museum.

Barnum did have a more conventional and serious side of his personality. He served

two terms in the Connecticut state legislature and was mayor of Bridgeport, where he battled fiercely and tirelessly against racial discrimination. He was a close friend of Mark Twain, Horace Greeley and other men of letters and, in 1855, he wrote his autobiography, entitled *The Life of P. T. Barnum, Written by Himself*. In it he revealed, for the first time, many of the deceptions he used to attract visitors to his great museum.

barrier-free campus A school or campus conforming to the federal REHABILITATION ACT OF 1973 and the AMERICANS WITH DISABILITIES ACT OF 1990 and to state and local regulations mandating free access to education and employ-

ment facilities for handicapped students, faculty and employees.

The act requires public buildings, public programs and private groups and schools that receive some form of federal aid to be accessible to the disabled. The Americans with Disabilities Act of 1990 mandates access for the disabled to employment and public services.

Depending on the age of the building and the extent of required renovations, the cost of converting a conventional public high school into a barrier-free campus can range from tens to hundreds of thousands of dollars. Federal regulations provide all specifications for adapting public buildings to accommodate the disabled, including ramps and ramp angles, elevators, escalators, barrier-free rest rooms with wheelchair-accessible sinks and toilets, wider doorways and lower water fountains. Other modifications include installation of special interior door levers and handles, installation of raised-letter signs for the blind and an additional parking area for cars and vans of the disabled. Classrooms must have portable or adaptable equipment, including accessible laboratory benches, lowered sinks, language-laboratory booths and machine-shop equipment. Also required are corridor handrails, lower fire alarm boxes, accessible shower stalls and lockers in locker rooms, lower emergency shut-off buttons and light switches, lower elevator control panels with raised letters and floor numbers.

Barron's Educational Series, Inc. A leading American publisher of college and university directories and guides to college and graduate school admissions tests. Founded in 1941, Barron's publishes a wide range of combination directories and guides to colleges and universities, of which the most widely used is the massive *Barron's Profile's of American Colleges*. This guide gives detailed descriptions of the programs of study, student life, extracur-

ricular activities, facilities and entrance requirements of every four-year college in the United States. The company publishes similar directories of graduate schools, as well as books on how to prepare for and take every type of college and university entrance examination.

Barzun, Jacques (1907–) French-born teacher, historian, author and critic of post-World War II American education. A member of the Paideia Group and coauthor of *THE PAIDEIA PROPOSAL*, Barzun moved to the United States in 1920, graduated from and taught at Columbia University and in 1958 became Columbia provost and dean of faculties. At Columbia, he urged undergraduates to avoid specialization during the first two years and obtain as broad a knowledge of the humanities as possible. He helped develop a two-year program of great books for that purpose.

Barzun published *Teacher in America* in 1945, and his 1959 essay "The House of Intellect" supported critics of the so-called culture explosion of the post-World War II years. During those years, 50% of American high school graduates flocked to four-year colleges, but half dropped out before graduation, with neither the academic skills to obtain white-collar jobs nor the vocational skills for blue-collar jobs. American colleges, Barzun contended, were not turning out a truly educated citizenry.

Barzun's other important works included *From Dawn to Decadence: 500 Years of Western Cultural Life* (2000) and *Science: The Glorious Entertainment* (1964), a criticism of the overpopularization of science and consequent awe of all things scientific. Both before and during his membership in the Paideia Group, Barzun is a strong advocate of ESSENTIALISM's core curriculum taught by a combination of rote learning, coaching and seminars. Like other critics of public school education in the United States, he called for abolition of general studies (see GENERAL EDUCATION) programs in public schools and "soft"

substitute courses—for example, social studies instead of history, and language arts instead of English. Barzun is an authority on music, art and literature. He has also written a number of books, some now classics, on these subjects.

basal readers Any of a series of books designed to teach children to read. Usually a part of a long-term instructional program, basal (or basic) reading programs include a series of readers, workbooks, activity sheets and a teacher's manual, with lessons planned according to grade level, from first to sixth grades.

Because it is the initial step, the program for first graders differs from those for older children. It includes two or three preprimers, a primer and a first reader. The preprimers are short and limit vocabulary to short, monosyllabic words—for example, "Dick sees Spot run." The primer is a collection of short stories with a limited, repetitive vocabulary, which the first reader expands into slightly longer stories with a more extensive vocabulary.

From second through sixth grade, the basal reading program usually includes at least two books for each level, designed to teach and expand reading, writing and spelling skills.

baseline data A statistical distribution system, which, for teachers, uses a straight line to represent data norms before they introduce a new or altered educational program. Thus, baseline data on one graph might represent a national or regional norm for a particular standardized test. A teacher might then post "dots" above or below that norm, each dot representing a student score. The result is a graphic portrayal of how the students in a class or school compare with the broader norms.

Baseline data may also refer to a variable line representing the results of a series of tests of a single student from which variations may be plotted after the student has completed programs designed to improve those results.

base-ten number system The Hindu-Arabic numeration system by which all basic calculations can be performed mentally, without the aid of mechanical devices. Introduced into western Europe by the Moors in the 12th century, it was not widely adopted in continental Europe until the 17th century. It has yet to be widely adopted in the United States for metric measurements.

basic education A curriculum that teaches fundamental reading, writing and calculating skills and a broad knowledge of science and history. Integral to essentialism and the BACK-TO-BASICS educational movement, basic education refers broadly to the knowledge and educational skills that best equip the individual for successful adaptation to modern society. Basic education stresses "hard" academics, as opposed to "soft" courses such as personal improvement, home economics, language arts and social studies.

Basic Principles of Curriculum and Instruction (1950) A small, classic pedagogical "how-to" work by Ralph Tyler of the University of Chicago aimed at introducing new courses and developing a curriculum. Concerned that too many courses were introduced to satisfy faculty egos or maintain faculty tenure, Tyler suggested that the existence of a course or curriculum should depend entirely on the needs of students, the needs of society or the essentiality of the knowledge. To test those needs or that essentiality, he said, a syllabus for a course or curriculum should detail the educational purposes of the course, the educational objectives, the organization of the course and the methods of measuring the success or failure of the course or curriculum.

basic skills Those intellectual functions taught in elementary school and deemed essential for independent functioning as an adult.

There has rarely been an era in American history in which educators have not debated what constitutes basic skills. In almost all eras, however, there has been agreement that reading, writing and calculating constitute at least three of them. From colonial days to the present, however, Latin, Greek, Hebrew, French, German, Spanish, Japanese, Russian, geography, map reading, astronomy, botany, biology, chemistry, physics, theology, philosophy and literature have all appeared on one or more lists of “basics” proposed by various educators.

Basic Skills and Educational Proficiency Program One of many federal programs established under the Educational Amendments of 1978 to improve elementary reading, writing and calculating skills of Americans of all ages and halt the spread of illiteracy. The three-pronged effort provided funds for public schools and nonschool educational agencies such as preschools and settlement houses to teach children and their parents. A second financial thrust provided funds to states to establish similar programs, and a third prong established national standards and achievement testing to measure basic skills. Like many federal educational projects, the program has had mixed results and provoked some criticism. In the 30 years following the program’s inception, reading proficiency for all students improved less than 1% by 2003, while writing proficiency declined nearly 3% and mathematics proficiency remained unchanged.

Critics of the program maintain that the lackluster academic performance of American students was *not* the result of inadequate funding, as some teachers and school administrators contend, but of poor quality teaching and school administration. Indeed, the United States spent \$6,995 per elementary school student in 2000, more than any country in the world except Denmark, which spent \$7,074 per pupil. At the high school level, the United States

spent \$8,855—the highest in the world except Switzerland, which spent \$9,780. Nevertheless, American 15-year-olds ranked only 18th in the world in reading literacy, 28th in mathematics literacy, and 14th in science literacy.

(See also ACCOUNTABILITY.)

battered-child syndrome A range of injuries symptomatic of physical abuse by a parent or surrogate, including fractures, hematomas (black-and-blue marks), skin tears and injuries, poor hygiene or evident malnutrition. Depending on the state or locality, teachers may be obliged by law to report or remand suspected victims of child abuse to the school nurse, their superiors or the police. Many are justifiably reluctant, however, because of the risk of lawsuits and the difficulty of lay people and even well-trained pediatricians of positively identifying many cases of battered-child syndrome. At best, many of those characteristics are often vague and ill-defined, and there is the ever-present possibility that a child’s injuries may have been self-inflicted in rough play or a simple accident.

Bay City, Michigan, Project An experiment in 1953 to improve public school education by freeing teachers from noninstructional duties and allowing them to devote more time to teaching. For two years, one paraprofessional was paired with each teacher to handle all clerical chores, but the students showed no academic improvements.

Bayly, Lewis (1565–1631) Author of *The Practise of Piety* (1619), one of the three most widely used books for self-education and family governance in the early colonies. Chaplain to King James I’s son Henry and, after Henry’s death, to the king himself, Bayly detailed how to read the Bible, how to govern a family, how to behave in church, how to perform good works and which prayers, meditations and

scriptural readings were appropriate for each of those functions. Designed to promote personal, social and religious stability, *The Practice of Piety* was second only to the Bible in importance to isolated colonial families who perceived themselves as surrounded and threatened by barbarism. It was one of four books to be translated into Algonquian in the 1650s, when missionaries attempted to build an “Indian Library” to convert Native Americans to Christianity in New England.

Beecher, Catherine (1800–1878) Pioneer educator and champion of women’s rights who won for American women the right to “a liberal education” and converted primary school teaching into a women’s profession. Born in Hartford, Connecticut, into one of the most



Catherine Beecher (Stowe-Day Foundation)

influential 19th-century American families, she was the daughter of the Rev. LYMAN BEECHER, the most powerful minister in a Christian America that heeded the words of its churchmen as much or more than the words of its president or governors. Connecticut was officially a Congregationalist state; Lyman Beecher was the recognized, albeit unofficial, head of that church.

Catherine was the oldest of four daughters and four sons and learned the “ornamental skills” at a fashionable school for young ladies. Devastated by the loss at sea of her fiancé, a Yale scholar, Beecher saw the loss as a sign from God to remain single and devote herself to the education of women. In 1823, she opened the famed HARTFORD FEMALE SEMINARY—one of only two such academies (secondary schools) for women in the United States that taught the same subjects as those taught in men’s academies. The idea of teaching chemistry, physics, history, Latin, English, French, German and philosophy to young women “dismayed” Hartford’s “leading gentlemen.”

Despite some initial “ridicule,” she built the academy into one of the world’s most celebrated institutions. She introduced the latest teaching techniques and equipment, and, in one of the great innovations of the day, introduced daily calisthenics and exercise as part of the regular curriculum. Inspired by her success, she reached out beyond Hartford, writing articles on female education and urging women “to act” and influence “the general interests of society.” She called on single women to help their country by building a nationwide system of schools that would unify the nation through education.

Beecher envisioned a national network of teacher training schools and, by 1831, she had converted her own academy into such an institution. She set out on a national crusade to found similar schools elsewhere and turned control of the Hartford Female Seminary to her

18-year-old sister Harriet, who would later gain fame as the author of *Uncle Tom's Cabin*. In 1833, she moved to Cincinnati with her father and founded the Western Female Institute to train more women as teachers. Two years later, she turned that school over to subordinates and returned east to begin a crusade to build a national network of teacher training schools that would eventually send an army of at least 90,000 women through the West to educate American children. She warned that "insubordination, anarchy and crime" were threatening to "run wild" and that the "education of the lower classes is deteriorating. . . . In one of the best educated Western states, one-third of the children are without schools." Beecher called teaching the most suitable role for women, who, as future mothers, were naturally endowed with the gifts required for nurturing the young, and she called on women to join her crusade to "save" the nation from ignorance.

Fearing that the spread of barbarism in the West would destroy their nation, men of wealth rallied around Beecher's cause and underwrote her Central Committee for Promoting National Education. The committee eventually trained and sent 450 women to bring education to rural towns throughout what was then the West (now the Midwest). Beecher's success made her the most influential woman of her day in the United States.

As her fame spread as a public speaker on behalf of the committee, so did her fame as a writer. A prolific contributor to periodicals, she produced a series of best-selling books and was far better known than her younger sister. Indeed, her *A Treatise on Domestic Economy for the Use of Young Ladies at Home and at School* was perhaps the most widely read book of its day. A "best-seller" for 15 years, it was as influential and widely read in its time as Benjamin Spock's *The Common Sense Book of Baby and Child Care* (1946) was from the late 1940s through the 1970s. It was the first single-vol-

ume book ever to detail every aspect of domestic life, including infant and child care, teaching the young, hygiene, nursing and healing the sick, cooking, cleaning, gardening, home maintenance and all other responsibilities for keeping the family alive and well.

There were few homes that did not depend on her book, and communities everywhere welcomed her as an authoritative speaker on home management and the role of women in American society. "The woman, who is rearing a family, . . . [and] the woman, who labors in the schoolroom," she wrote, "are . . . accomplishing the greatest work that was ever committed to human responsibility."

Fewer than 10% of American teachers were women when she started her crusade in 1830. By 1888, 10 years after her death, women made up 63% of the teaching profession overall, and 90% in cities. The Civil War helped by plucking male teachers from their classrooms, and when they returned from war, the industrial revolution had created factory jobs that paid more than teaching. Moreover, the war had left many towns too poor to pay teachers more than a subsistence wage. Schools saved money by hiring women, whose salaries were lower than men's.

Nevertheless, Catherine Beecher's work produced the initial momentum for women's entry into teaching. While traveling to promote her books, she helped found teacher training schools in Ohio, Illinois and Wisconsin. Ironically, of all the schools she founded, only the last has survived. It became the Milwaukee-Downer School and eventually part of the University of Wisconsin. Even her Hartford Female Seminary closed. She spent her last years living with her sister Harriet. Together they wrote *The American Woman's Home*—an updated version of Catherine's earlier *Treatise on Domestic Economy for the Use of Young Ladies at Home and at School*. She and Harriet also tried unsuccessfully to found a medical training institute that would train women as "home physicians."

Beecher, Lyman (1775–1863) Charismatic American Presbyterian minister whose hold over the minds of so many Americans of his day preserved Protestant influence in American education for nearly a century. Born in Connecticut, Beecher came from a family of farmers and blacksmiths whose forebears had arrived in Boston with the Puritans in 1637 and a year later founded New Haven.

He attended Yale College and, under the influence of college president TIMOTHY DWIGHT, emerged a fierce Calvinist conservative who

quickly became leader of the burgeoning evangelical movement that swept the United States at the beginning of the 19th century. After a 10-year apprenticeship as minister in a church in East Hampton, Long Island, he took over the pulpit in Litchfield, Connecticut, then a social and cultural center of the Northeast, from which his preachments and writings were heard across the nation and even in England. A rigid Calvinist, he told his wife after their marriage that he expected complete and unquestioning obedience from her. “She



Lyman Beecher (center, front), shortly before his death, surrounded by his illustrious children and their spouses. To his immediate right is famed educator Catherine Beecher; her sister, Harriet Beecher Stowe, the author of *Uncle Tom's Cabin*, is on the far right. (Stowe-Day Foundation)

entered my character completely," he later wrote.

He quickly became one of America's most powerful leaders, preaching twice on Sundays and speaking every day of the week to audiences throughout the Northeast. He was responsible for conversion of tens of thousands of Americans. After he succeeded in obtaining a ban on alcohol in Connecticut, state legislators decided to disestablish Congregationalism as the official state religion lest his ministerial powers supersede their own. This disestablishment in 1818 spurred him to found the Domestic Missionary Society to educate an army of devout young ministers who would control the nation's churches and, therefore, the education of the nation's children. Public schools were still 15 years away in Connecticut and as many as four to five decades away in many parts of the nation. The church was America's primary educational institution. Beecher knew this and prepared to take control of it through his new Missionary Society and the AMERICAN BIBLE SOCIETY, which he had helped found two years earlier.

In 1826, he moved to the even more visible pulpit of a Boston church, where, for six-and-half years, he attacked Unitarians, Roman Catholics and all others who refused conversion to what he considered America's church. One of his sermons provoked a Boston mob to sack the Convent of Ursuline Nuns in Charlestown.

In 1832, he accepted an offer to be the first president of the Lane Theological Seminary in Cincinnati, where he could spread his influence throughout the West. In 1834, however, the trustees banned any on-campus discussion of abolition, and most of the students left for OBERLIN COLLEGE, which had become a hotbed of abolitionism.

As abolition replaced EVANGELISM as the foremost issue in the United States, Beecher's influence began to wane. In 1850, he moved to Brooklyn, where he lived the remainder of his

life with his clergyman son Henry Ward Beecher, who would replace his father as the most influential Protestant minister in the United States. Besides Henry, Beecher had four other sons, who also became ministers of considerable influence, and four daughters. CATHERINE BEECHER became an educator, women's advocate and perhaps the most influential American woman of her day. Harriet Beecher married her father's chief ministerial assistant, Calvin Stowe, and later wrote the celebrated *Uncle Tom's Cabin*. Historians agree that next to the Adams family, Lyman Beecher's family was the most influential 19th-century American family.

behaviorism An early 20th-century school of psychology based on strictly objective experimental procedures for studying observable human behavior. Developed by American psychologist John B. Watson (1878–1958), the behavioristschoolrejectedtheearlierapproaches of psychological research based on the study of inner feelings and other nonobservable introspective reports by human subjects. Influenced largely by the experiments of Russian psychologist Ivan P. Pavlov, Watson used only objective laboratory procedures to obtain statistically significant results. The result was a stimulus-response theory of behavior that tied all human behavior, no matter how complex, to observable, measurable muscular and glandular responses.

behavior modification A broad range of psychological, medical and physical procedures for treating emotional dysfunction and maladjustment and changing behavior patterns. Procedures may include physical or mental coercion, brainwashing, brain surgery, drugs or psychotherapy, physical punishment or any combination of these or other procedures—all of them designed to alter subject behavior. Russian psychologist Ivan P. Pavlov stumbled

on behavior modification at the turn of the 20th century when he trained a dog to salivate at the sight of a circle projected on a screen. The dog did not salivate at the sight of an ellipse. As Pavlov gradually altered the shape of the ellipse to resemble a circle, the dog grew agitated and gradually ceased to salivate at the sight of the circle. Later, in 1920, John B. Watson, the American behaviorist, and his colleagues instilled a fear reaction to rats in an 11-month baby by sounding a loud noise at the approach of a white laboratory rat. Prior to behavior modification, the baby had played gleefully with the gentle white rat.

Belknap, Jeremy (1744–1798) Teacher, minister, prolific author of important early American histories and cofounder of the Massachusetts Historical Society. Born in Boston, he graduated from Harvard College at 18 and taught school while studying for the ministry. After holding ministries in various towns in New Hampshire and Massachusetts, in 1787 he assumed the pulpit at Boston's Federal Church, where he remained for the rest of his life. His ministry allowed him enough time to write the definitive, three-volume *History of New Hampshire*, which remains valuable for its depth of research into natural history as well as its social and political history. He later wrote a two-volume *American Biography*, covering the lives of famous early explorers and colonial leaders. In 1790, he met with other Boston men of letters, including JOHN ELIOT and James Winthrop, to form the Antiquarian Society, which, in 1794, became the Massachusetts Historical Society—the first institution of its kind in the United States. As corresponding secretary, Belknap encouraged men of letters in other states to form similar groups. Apart from his historical works, Belknap wrote several religious works and a collection of psalms and hymns.

Bell, Alexander Graham (1847–1922) Inventor and pioneer educator of the deaf. Bell's inventions of the telephone and other apparatuses were incidental and avocational outgrowths of his work in education.

Born in Edinburgh, Scotland, Bell was the product of a brilliant family whose multiple talents served as a foundation for his life's work. He was taught at home for the first 10 years of his life by his mother, a talented musician and artist and daughter of a Royal Navy surgeon. Bell's grandfather, Alexander Bell, was a professor of elocution in London. His father, Alexander Melville Bell, was a scientist, an author on elocution and the physiology of the voice, and the inventor of "Visible Speech," an important system that used symbols to indicate graphically the position of the vocal organs for each speech sound.

At the age of 10, young Bell went to an academy in Edinburgh and then high school. A brilliant scholar, he graduated at 13. By the time he was 20, he had spent a year at the University of Edinburgh, studied anatomy and physiology for three years at University College, London, had taught elocution and music for three years at an academy and for one year at Somersetshire College in Bath. He had also done substantial original research in his father's laboratory on resonance pitches of the mouth cavities and the electrical transmission of speech.

In 1868, Bell's father sent him to a school for deaf children in Kensington to adapt Visible Speech into a system for teaching the deaf. The elder Bell described his son's remarkable results in a lecture in Boston, and the following year the Boston School Board appointed Miss Sarah Fuller to start the first day school for the deaf in the United States.

In 1870, the Bell family moved to Canada, and in 1871 the Boston School Board asked Bell to come to Boston to train teachers for the deaf. Now dedicated to a career of educating the deaf, he adapted his father's Visible System



Alexander Graham Bell (top of stairs on right) at the Pemberton Avenue School for the Deaf, in Boston, where he trained teachers of the deaf (*Library of Congress*)

by adding a system of notation that is still the basic method of teaching the deaf to talk. After three months at Miss Fuller's school, he went on to train teachers at other institutions in Massachusetts and Connecticut. Demand for his services grew so great that he opened a teacher's training class in Boston, to which institutions from across the United States, Canada and even Europe sent teachers to learn Bell's use of Visible Speech. In 1873, he started a teacher training school at Boston University, which appointed him professor of vocal physiology and speech mechanics.

Bell also worked directly with private deaf pupils in his home, all the while inventing and developing acoustical devices to augment hear-

ing and help teach his pupils. In 1873, he agreed to accept in his home a five-year-old boy who had been born deaf and became, at the time, the youngest deaf pupil ever to attempt formal education. Bell had complete charge of his education for three years and lived with him at the boy's grandmother's. Combining, for the first time, kindergarten play with formal instruction, Bell achieved such remarkable results that the boy's grateful father, Thomas Sanders, agreed to finance all of Bell's experimental work, including the costs of materials and securing patents. The results were three inventions: a phonautograph to convert sounds into graphic representations that allowed deaf pupils to "see" the sounds they

made; a multiple telegraph that permitted more than one telegraph message to travel over the same line; and an electric speaking telegraph—the telephone. On March 10, 1876, while he was still working with the Sanders boy, Bell transmitted the first complete intelligible sentence over the telephone to his assistant Thomas Watson in the next room: “Mr. Watson, come here: I want you.”

With the help of Sanders and another wealthy benefactor, Gardiner G. Hubbard, whose daughter had been deaf from early childhood, Bell obtained patents for his devices and successfully defended himself in some 600 lawsuits by claimants to his rights. After the U.S. Supreme Court declared him the sole inventor of the telephone, Bell formed the Bell Telephone Company, with Hubbard as trustee and Thomas Sanders as treasurer. In 1877, Bell married Hubbard’s deaf daughter, Mabel, who bore him two sons, both of whom became speech teachers. Bell went on to invent the audiometer, an instrument to measure hearing, and a number of other devices which he declined to patent and simply gave to the world for treatment of the deaf.

In 1878, he founded the Volta Laboratory to study the causes and conditions of congenital deafness. In 1883, a year after he had become a U.S. citizen, he founded the periodical *Science*, and from 1896 to 1904 he served as president and helped expand the National Geographic Society and its magazine. In 1891, his gift to the Smithsonian Institution paid for the building of its Astrophysical Observatory. In 1915, he opened the first transcontinental telephone line from New York to San Francisco. Beloved by educators and students, he received innumerable honorary degrees from Harvard, Oxford and other universities. He died at his summer home on Cape Breton Island, Canada, where, as he was being buried, every telephone on the North American continent remained silent.

Bell, Terrel H. (1921–1996) The second secretary of education, appointed in 1981 by President Ronald Reagan, with specific instructions to dismantle and abolish the department and to reduce federal involvement in American education. The president’s order culminated nearly two decades of ever-increasing federal investment in education, with no tangible results to show but a steady decline in academic proficiency by American school children. Bell circumvented the president’s orders, however, and by the time he left his post in 1985, he had expanded the department’s role in education and its budget, and his successor, WILLIAM J. BENNETT continued that expansion.

(See also BASIC SKILLS AND EDUCATIONAL PROFICIENCY PROGRAM.)

Bellamy, Edward (1850–1898) A leader of the utopian school of American writing in the 1880s and an advocate of child labor laws and compulsory universal education for students up to 16. His best-selling book *Looking Backward 2000–1887*, published in 1888, portrayed a mythical Boston where all children obtained by right the finest physical, psychological and educational care in the world’s finest primary and secondary schools. All other social institutions were equally perfect, and men and women retired at 45 to pursue “improvement or recreation” for the rest of their lives.

Bellamy, Joseph (1719–1790) Colonial theologian and founder of the first “graduate school” for professional education. Like training for law or medicine, training for the Congregationalist, Episcopal and Presbyterian ministries in the American colonies began with a liberal academic education (including attaining fluency in the scriptural languages Latin, Greek and Hebrew) at one of several academies and colleges. Graduates then served apprenticeships with practicing ministers until they acquired enough knowledge to pass examina-

tions before a ministerial body and obtain ordination and a license to preach.

A farmer's son from Cheshire, Connecticut, Bellamy went to Yale College, then a school of theology a few miles away, where he studied under the charismatic JONATHAN EDWARDS. Edwards converted Bellamy into one of his most ardent disciples. After graduating and preaching in various Connecticut churches, Bellamy became pastor in the new parish of Bethlehem, Connecticut, where he remained the rest of his life. Jonathan Edwards inaugurated the church, and with so auspicious a beginning, Bellamy's pulpit brought him immediate prominence. A fervent, charismatic preacher, he quickly attracted flocks of young men seeking to serve apprenticeships with him. To accommodate them he formalized the normal apprenticeship training into a curriculum that became the first formal program of "graduate" education, which eventually replaced apprenticeships in professional education.

Opened in 1742 in his home, Bellamy's school is believed to have been the model for the first law school, which Tapping Reeve opened later in Litchfield, Connecticut. Bellamy's program lasted between one and two years and began with the presentation to students of a basic set of broad theological questions and a list of books; students were to study the books and discover the answers. Preliminary answers were debated, with Bellamy playing "devil's advocate." Each question required a final dissertation and a series of sermons. After completion of their studies, graduates armed with Bellamy's letters of recommendation were examined by a ministerial body for final examination and ordination. Bellamy operated his school until his death, by which time the first formal theological seminaries had opened.

Bell Telephone Co. A pioneer in workplace vocational education and one of the first

companies to establish formal, in-house educational programs to teach employees a wide range of managerial, scientific and vocational skills. Because of the new and specialized nature of the work, Bell set up operators' and telephone installers' schools in its offices and plants at the turn of the 20th century. Courses ran one or more weeks, depending on the complexity of the work. When American Telephone & Telegraph Co. established Bell Laboratories as a separate research arm in 1925, it put education in Bell's domain, and Bell Laboratories expanded the educational program to include almost every aspect of work within the company.

During the 1950s, Bell's education program expanded into one of the largest, most far-reaching adult education programs in the world, with an annual budget in excess of \$1 billion. Until the 1982 court-ordered breakup of American Telephone & Telegraph Co., the Human Resource Department, as the educational arm was called, boasted a university-style campus in Illinois where the company not only trained new and newly promoted employees for their jobs but offered advanced education to its entire scientific and technical staff. The advanced education consisted of classroom managerial instruction akin to graduate business schools.

(See also CORPORATION COLLEGES AND SCHOOLS.)

Bender-Gestalt Test A test developed in the late 1920s—ostensibly to measure visual perception, but also valid as a broad indicator of maturation, emotional stability, intelligence, learning disabilities and possible brain damage. It is valid for subjects as young as four, as well as older children and adults. Developed by Lauretta Bender at the Johns Hopkins Hospital Psychiatric Clinic, the test asks a subject to draw from memory, one at a time, each of nine increasingly complex geometric designs.

Benezet, Anthony (1713–1784) One of the most important teachers in American history and a pioneer in the education of African Americans, the poor, the handicapped and the disenfranchised. He was also one of the few early teachers to introduce kindness and understanding into pedagogy.

Benezet was born in France to a Huguenot family that fled to Holland and then to England to escape the massacres of Protestants by French Catholics. His merchant father set up a successful business in England, but the family nevertheless decided to move to Philadelphia in 1731. Young Benezet joined the Quakers and studied for the ministry, which, at the time, provided almost all the teachers for American schools.

From 1739 to 1742, he taught at a Quaker school in Germantown, Pennsylvania, and then spent 12 years at the Friends' English Public School in Philadelphia, now the William Penn Charter School. Upset with the poor quality of education for girls, he founded a Quaker girls' school, where he taught until 1766, when poor health forced his retirement. During those years, however, he also conducted classes of his own and at his own expense for a wide variety of disenfranchised children to whom education was otherwise unavailable.

For more than 20 years, beginning in 1750, he conducted free classes for African-American children and educated poor children and adults of all races. He developed his own primers, spellers and grammars for the young—and a special curriculum for deaf and dumb children, whose education he also pioneered. Later, poor health forced his retirement. He returned to Philadelphia to conduct classes for indigent girls whom no one else was willing to teach. In 1782, he helped establish a formal school for African-American children, likewise shunned by teachers. He volunteered his services and remained there until he died, leaving his modest fortune to the school.

A prolific writer, Benezet railed against the slave trade, against war and against all the cruelties inflicted on man by man. He stood out as one of the few humane egalitarians in an era when even such men as Thomas Jefferson harbored no doubts about black inferiority and others believed that African Americans were not even human.

"I have found amongst the Negroes," wrote Benezet in an astounding treatise for the times, "as great a variety of talents, as among a like number of whites; and I am bold to assert, that the notion entertained by some, that the blacks are inferior in their capacities, is a vulgar prejudice, founded on the pride or ignorance of their lordly masters; who have kept their slaves at such a distance, as to be unable to form a right judgment of them."

In his pedagogical works, Benezet condemned the cruelties that most teachers inflicted on children in classrooms. He called compassion, gentleness and understanding primary to successful teaching.

Benjamin, Harold (1893–1969) American teacher, educator and university administrator who gained national attention in 1930 for his satirical work *The Saber-Tooth Curriculum*, written under the pseudonym J. Abner Peddiwell. His book mocked the American educational establishment for its resistance to change and unwillingness to adapt the curriculum to the needs of modern society. It details the refusal of the directors of a school in a primitive society to alter the curriculum after a glacier moves across the land and changes the skills required for survival.

During his career of more than 40 years in education, Benjamin held posts at the universities of Oregon and Minnesota and at Stanford University and was dean of education at the University of Maryland. He was the author of a number of serious works on education, including *Building a National System of Education*

(1955) and *Higher Education in the American Republics* (1965), and an autobiographical novel, *The Sage of Petaluma* (1965).

Bennett, William J. (1943–) Controversial secretary of education from 1985 to 1988, who constantly criticized the American education establishment for its mediocrity and failure to educate properly the children from middle and lower economic groups. In 1987 and 1988, he proposed a basic curriculum for elementary and high school students and challenged school districts across the United States to adopt it. Issued in two booklets entitled *James Madison Elementary School* and *James Madison High School*, the curriculum reflects the principles of the BACK-TO-BASICS educational movement with a core curriculum that provides a firm grounding in reading, writing and calculating skills, as well as science and history.

Bennett also denounced the general education track which absorbs about 40% of all high school students and produces about two-thirds of all high school dropouts—more than 2 million a year. “No American student” he said, “should graduate from high school without first completing four years of English and three years each of social studies, mathematics and science.”

Bennett Law A Wisconsin law passed in 1890 requiring the use of English in teaching specific subjects in all elementary and secondary schools. Enactment of the law was a response to the attempt of the Roman Catholic St. Raphael Societies in Europe to establish parochial schools in the United States headed by priests who spoke and would teach in the language of the ethnic groups in their particular parishes. Anticipating the backlash that did indeed follow, James Cardinal Gibbons, the leader of the American Catholic hierarchy, protested to Rome about the interference in American affairs by the societies, and the

papal secretary of state officially ended those efforts.

Nevertheless, the Massachusetts legislature made an abortive attempt in 1899 to require children between the ages of eight and 14 to attend schools offering an “English curriculum,” and Wisconsin passed the Bennett Law the following year.

Bennington College A private Vermont coeducational college based on the progressive educational philosophy of JOHN DEWEY and his close colleague WILLIAM H. KILPATRICK, who helped found the school in 1932. From its inception, Bennington was designed to give gifted students free rein to develop naturally, intellectually and emotionally. Originally a women’s college, Bennington had no required courses, no lectures, no examinations, no grades, no social organizations, no school colors, songs or yearbooks. The “curriculum” was based on independent study and designed by students who worked “with” rather than under their mentor-teachers. The faculty evaluated each student’s work with extensive critical appraisal, which became part of the student’s record. To this day, students receive either a “pass” or “fail” for their work and a B.A. (and sometimes an M.A.) at graduation. The college year is divided into two 14-week terms and a third eight-week field term during which students have to leave campus and work either in paid jobs or as volunteers, afterward writing reports on their experiences.

Bennington became coeducational in 1969, and by 2005 men made up more than 26% of its students. About 20% of students drop out by the end of freshman year, and only 83% of those who remain go on to graduate. There are about 25 social organizations on campus and three intercollegiate and 10 intramural sports for men and an equal number for women. There are no sororities or fraternities. Drama, dance and literature have always been

central to the Bennington curriculum. Seven-week work internships in January and February are required during each of the four years. The Bennington School of Dance, held in summers during the 1930s and 1940s, was an important center of early modern American ballet.

Berea College One of the few colleges founded before the Civil War that admitted African Americans. Started by missionaries in Berea, Kentucky, in 1855, the school is a private, coeducational institution with “a non-sectarian Christian focus” and more than 1,500 students, of whom 17% are African Americans. As they did at the school’s founding, all students must work on campus to help maintain the grounds and buildings, for which they receive “labor grants” in the form of credits (about \$3,000 in 2000) toward the cost of their education (about \$14,000 in 2000).

Berkeley, Sir William (1606–1677) Colonial governor of Virginia, from 1642 to 1676. He was a fierce opponent of the growing movement in favor of education as a way of promoting piety, civility and learning among the people. Berkeley’s most famous comment on education was his 1671 reply to the Commissioners of Trade and Plantations: “But, I thank God, there are no free schools nor printing, and I hope we shall not have these [for a] hundred years; for learning has brought disobedience and heresy, and sects into the world, and printing has divulged them, and libels against the best government. God keep us from both!”

In 1676, planter Nathaniel Bacon demanded that Berkeley explain “what arts, science, schools of learning, or manufacturies, have been promoted by those in authority.” Rebuffed, Bacon led planters in a rebellion in which Jamestown burned. Bacon died, and 23 of his followers were executed.

Berkshire Agricultural Society The first organization to provide AGRICULTURAL EDUCATION to American farmers. Founded in 1811 by ELKANAH WATSON, the society was the first organization to sponsor agricultural fairs which, while offering some amusements, had as their central purpose the education of farmers in the latest scientific agricultural techniques and the use of the most modern equipment. Although gentlemen’s agricultural societies modeled on those in England had been common during the colonial era, none was open to the poorer, so-called dirt farmers.

Watson, a businessman who had made and lost several fortunes by the time he was 50, scored a sudden and unexpected success raising Merino sheep on a farm he bought near Pittsfield, Massachusetts. Eager to show the results of his success, he organized 26 of his neighbors and staged the Berkshire Cattle Show in 1810 to display prize sheep. In 1811, he and the others organized the much broader Berkshire Agricultural Society, which absorbed the cattle show and became an annual event. Watson began promoting his “Berkshire Plan” nationally, writing letters, speaking to farmers’ groups and producing pamphlets. The Berkshire societies spread quickly across New England. Some fairs had more entertainment than others to permit the entire farm family to enjoy the fairs.

Except in the South, farmers themselves joined and supported the societies, and state governments added funds to ensure their success as educative organizations. Southern farmers refused to participate in the agricultural education movement because they feared educating their slaves. The Berkshire societies began to lose membership after the Civil War, as new farm technology produced huge surpluses that sent prices plunging. Faced with financial losses, farmers turned to new politically oriented self-help organizations such as the Grange and the FARMERS’

ALLIANCES, which added political action to agricultural education and led farmers to work collusively to bid prices upward in what became a long battle with the growing trusts in the food industry.

Bestor, Arthur E., Jr. (1909–1994) American professor of history, constitutional scholar and author of *Educational Wastelands: The Retreat from Learning in Our Public Schools*, a 1953 work that described and analyzed the deterioration of American public schools. An educational conservative and opponent of PROGRESSIVE EDUCATION, Bestor pointed out that the transformation of American high schools from an elite to a mass institution was destroying the quality of education. Universal high school education, he predicted, would force public schools to have to provide for the emotionally disturbed, the handicapped, the learning disabled, the mildly retarded, the semi-literate from other lands and a host of other children with social problems which public schools are not equipped to solve.

In trying to provide “something for everyone,” Bestor warned, the schools were gradually providing nothing for anyone. He charged that secondary education had deteriorated to the point where students had to be taught in college what they should have learned in high school. “The idea that the school must undertake to meet every need that some other agency is failing to meet, regardless of the suitability of the schoolroom to the task, is a preposterous delusion that in the end can wreck the educational system.”

A graduate of Yale University, Bestor was born in Chautauqua, New York, where his father was president of the Chautauqua Institution. He taught at Yale, Columbia University’s Teachers College and the University of Washington and was the first constitutional scholar to call for the resignation of President Richard M. Nixon.

Bethel School District No. 403 v. Fraser A 1986 decision that clarified the Supreme Court’s 1969 decision in *TINKER V. DES MOINES INDEPENDENT COMMUNITY SCHOOL DISTRICT* regarding student First Amendment rights of free speech. In that case, the Court had held that school officials had violated student First Amendment rights by suspending three high school students for wearing arm bands that, in effect, silently protested the war in Vietnam. Prior to the suspension, the school had routinely allowed other students to wear political buttons, and the Court held that the suspension of the boys with arm bands was based solely on official disagreement with the political opinions of the students and not because the students had disrupted school routine in any way.

In *Fraser*, however, school officials suspended a boy from school for three days after he had delivered a speech to the student assembly nominating a fellow student for elective office in the student government and punctuating his remarks with obscenities, profanities and explicit sexual gestures. After a referee rejected the boy’s appeal, the boy’s father sued the school for abridging his son’s First Amendment rights. Although two lower courts upheld the father, the Supreme Court ruled in favor of the school, making it clear—as it had not in *Tinker*—that student constitutional rights are far narrower than those of adults. Although the Court admitted that Fraser’s speech would have been guaranteed constitutional protection had he been an adult, it held that public schools have a right and an obligation to maintain an atmosphere of respect and civility in the school environment.

Bethune, Mary McLeod (1875–1955) Pioneer educator of African-American women and founder-president of what later became Bethune-Cookman College in Daytona Beach, Florida. The 15th and first free-born of 17 children of former slaves, Bethune did not begin her formal education until she was 11.



Mary McLeod Bethune (Library of Congress)

Eventually, she graduated from Dwight L. Moody's BIBLE INSTITUTE in Chicago, and after being rejected as a missionary to Africa, she became a teacher in Georgia and then Florida.

Upset by the lack of educational opportunities for black girls, she rented a rundown building in Daytona Beach and opened her own school, which she called the Daytona Normal and Industrial School for Negro Girls, with five girls and her own son as its first students. Bethune and her students sold sweet potato pies and fried fish, sang and even begged for funds to keep the school open until 1912, when James N. Gamble, son of the founder of Proctor & Gamble Co., and Thomas White of the White Sewing Machine Company agreed to underwrite her efforts. Later, she merged the school with the Cookman Institute and turned the school into a teacher-training institute. Now affiliated with the United Methodist Church, Bethune-Cookman is a coeducational

liberal arts college with more than 2,500 students, of whom 96% are black. It awards bachelor's degrees in a wide range of arts and sciences, as well as in education.

Bethune went on to found the National Council of Negro Women in 1935, and she served as President Franklin D. Roosevelt's special advisor on minority affairs and director of Negro affairs in the National Youth Administration in 1936. She attended the founding conference of the United Nations in San Francisco as a U.S. State Department special emissary.

Bial-Dale College Adaptability Index A highly controversial test developed in 1999 involving Lego blocks and in-depth interviews to identify such noncognitive skills of culturally and academically deprived college applicants. Noncognitive skills measured include leadership, social interaction and ability to work in groups. Designed to help predict success in college, the test was developed by Harvard University doctoral student Deborah Bial. The index evaluates about 100 students at a time, dividing them into groups of 10 to 12 and asking each group to perform a dozen tasks. One such task requires members of the group to study a robot built of Lego blocks and move to a second area, out of sight of the model, and reconstruct it, conferring with each other as they do. In addition to testing skills and abilities to interact with peers, each applicant is interviewed, with interview results counting one-third of the final score. Administered by the EDUCATIONAL TESTING SERVICE, the index was developed as part of a \$1.9 million grant from the Andrew W. Mellon Foundation to help colleges and universities achieve greater racial diversification than they have with conventional college admissions tests.

(See also STRIVERS.)

Bible, the The sacred scriptures of Christians. Until its translation into English in the 16th

century, the Bible was almost exclusively read aloud in Latin by the English clergy to their parishioners. It was the King James version of the Bible in 1611 that made it accessible to literate people (primarily the nobility), and in the solitude of the American colonies, the Bible and related devotional texts accounted for 50% of the books printed in 17th-century America.

It was the single most important cultural influence in colonial New England, pervading every thought of many Puritans, who read it, recited it, quoted from it, committed it to memory and consulted it from day to day. They believed it held the answer to every question, along with the rules of daily conduct, for formula for personal salvation and clear expositions of good and evil.

Aside from its uses as a spiritual guide, the Bible was also a basic textbook for teaching children to read. The earliest education in the colonies was in the home, where individual reading, responsive reading and communal reading were daily activities in many households. After teaching their children the alphabet, parents routinely used a primer to teach their children to read and recite elementary religious texts such as the Lord's Prayer, the Apostles' Creed and the Decalogue. The next step in their education was a catechism of questions and answers on fundamental religious beliefs and, eventually, the reading of the Bible.

As Puritan ministers expanded the functions of their churches to include weekday instruction, the Bible was their basic text in what they called the "school of Christ," and the primary purpose of "learning one's letters" was to read the Bible. Minister-operated church schools expanded their curricula and evolved into the grammar schools of the late 17th century, where the study of Greek, Latin and Hebrew was essential for the study of scriptural and related texts in their original forms. The Bible remained a central text in grammar schools, academies and colleges of the 18th

century, although somewhat less time was devoted to theology as the curriculum expanded to include the sciences, modern literature and modern foreign languages. Although Congress amended the Constitution in 1791 with a provision that "Congress shall make no law respecting an establishment of religion . . ." (see ESTABLISHMENT CLAUSE), the Bible's importance to the curriculum did not diminish until the mid-19th century, after states had severed their official ties to the church and gradually stripped churches of their role in education by building state-run, secular public school systems. Connecticut did not sever its ties to the church until 1818. Massachusetts waited until 1833. Even after Massachusetts and Connecticut built state-run public school systems in the late 1830s and 1840s, rural America continued to depend on local churches and their ministers to educate the young until the beginning of the 20th century.

Despite numerous U.S. Supreme Court decisions banning its use in public schools, the Bible remains an explicit or implicit text in many American public schools—especially in rural Christian and Mormon communities where teachers routinely inject scriptural materials into classroom discussions. With the growth of Christian fundamentalist influence in the 1980s, many publishers started issuing—and trying to introduce into public school curricula—a number of quasi-academic texts designed to incorporate Bible studies into high school literature, history and social studies courses, using titles that refer to the "influence" rather than the content of the Bible.

(See also CREATION SCIENCE; *EDWARDS V. AGUILLARD*; INTELLIGENT DESIGN.)

Bible Institute An alternative college for orthodox evangelical Christian education, founded in Chicago by revivalist preacher Dwight L. Moody in 1889. A leader of the most powerful Christian evangelical movement of

the late 19th century, Moody conceived of the institute as a training school for a new army of missionaries whose education would be less classical than that of ordained ministers and would require no training in Latin or Greek. It was, in effect, the first trade school for missionaries, lay preachers and, later, evangelical teachers—a forerunner of the hundreds of religiously oriented nondegree-granting institutions of today. The Bible Institute pioneered the use of correspondence courses, radio courses and a host of other innovative education methods and eventually developed a broad curriculum of materials for Bible study and Sunday schools.

bilingual/bicultural education A controversial program using two languages to teach a curriculum that includes studies of the cultures from which the two languages are derived. Formally introduced for the first time in U.S. public schools in 1965, bilingual and bicultural education represents a sharp break with the American public school tradition of forcing all children, regardless of their national origins, to accept and adopt English as their native tongue and assimilate into American culture.

A wave of Puerto Rican migration northward in the 1950s and 1960s, however, forced American educators—and legislators—to rethink the AMERICANIZATION process in public schools. Unlike non-English-speaking immigrants of the past, who could not become citizens without learning English, Puerto Ricans were American citizens and had the constitutional right not to speak English. Failure to learn English, however, often interfered with the abilities of some young Puerto Ricans to graduate from mainland public schools with marketable skills. More than 35% of Hispanic students dropped out of high school, compared with 10% for whites, and those who remained in school scored 10% to 15% below white students of the same age in language and mathematics proficiency tests. Nevertheless, a

growing Hispanic population demanded the right to have their children taught in their native Spanish, and Congress passed the so-called Bilingual Education Act—Title VII of the ELEMENTARY AND SECONDARY EDUCATION ACT OF 1965, as amended in 1974.

The act authorized establishment of programs of bilingual education “designed for children of limited English-speaking ability in elementary or secondary schools.” Although such programs do include instruction in and study of English, they allow the rest of the child’s instruction “in all courses and/or subjects of study” to be in his or her native language “to the extent necessary to allow to allow a child to progress effectively through the educational system. . . .” Moreover, all instruction must be “given with appreciation for the cultural heritage of such children. . . .”

Administered by the Office of Bilingual Education, and designed to provide students with bilingual instruction in any or all of their subjects, bilingual education has produced few of the results envisioned by its proponents. In the first 30 years of the program’s existence, the rate of Hispanic high school dropouts increased nearly 30%, while language and mathematics proficiency in relation to that of whites have remained relatively unchanged. Meanwhile, the program has produced little bilingualism. Indeed, large enclaves have emerged in major cities such as New York, Miami and Los Angeles where Spanish is often the only language spoken.

Adding to the problem was the surge in the number of immigrants—both legal and illegal—at the turn of the century. By 2000, limited-English students made up nearly 4% of the elementary and secondary school population in the United States, but in high-immigration states such as California, Texas, New York, Florida and Illinois, the percentage of limited-English students in public schools climbed as high as 25%. California alone harbored 40%

of the nation's limited-English students, with about 1.5 million. Limited-English students number about 500,000 in Texas schools, 250,000 in New York, nearly 200,000 in Florida and more than 100,000 in Illinois. As California's costs of bilingual education rose to more than \$300 million a year, and federal spending on such programs touched \$250 million, grassroots rebellions began erupting across the nation. In 1995, California and Arizona passed laws establishing English as the official state language. In 1996, a group of economically deprived Hispanic parents voted to boycott local elementary schools in Los Angeles until authorities agreed to teach their children in English and thus improve their children's long-term chances of attending college and getting jobs. "They need English here," proclaimed one of the parent leaders, a Mexican mother who worked as a dyer in a blue jeans manufacturing plant. "They can't get a job if they don't speak English." In June 1998, California voters flocked to the polls in a referendum and overwhelmingly approved a measure that banned bilingual education in public schools and replaced it with a year of intensive English instruction—in effect, the traditional, age-old immersion programs for learning foreign languages. Arizona followed suit in 2000. In 2002, Massachusetts and Colorado voters approved measures that placed all non-English-speaking students in English immersion classes for a year and then mainstreamed them into conventional classes. Parents were given the right to apply for waivers to keep their children in bilingual classes, but districts were given the discretionary right to reject such applications without explanation.

Such initiatives have gradually eroded bilingual education as a curricular staple in some high-immigrant states. Nationally, only 850,000 limited-English students are enrolled in bilingual education programs, compared with 976,000 in English-only immersion pro-

grams. More than 2 million others are in programs that combine the two approaches.

The need for fluency in English is incontestable. More than 400 million Internet users around the world use English for 95% of all Internet transmissions. Ninety-five percent of the more than 1 million scientific articles published in thousands of major periodicals around the world are written in English. English has become the official language of higher education and science—indeed, the lingua franca of academia throughout the world—much as LATIN once was the common language that scholars of different nationalities used to communicate with one another. All graduate science and engineering courses in the Scandinavian countries, in Holland, in Greece and in dozens of other countries are now taught in English—largely because so many students cross international frontiers to study, and professors invariably have to use a common language understood by all to teach a polyglot audience. That language is now English.

bilingual instruction Teaching methods designed to facilitate education of non-English-speaking students in American elementary and secondary schools by teaching them in their native language as well as in English. An outgrowth of the federal government's official sanction of bilingual education in 1968, there are two basic methods of bilingual instruction in use in American public schools: the native language method and ESL, or English as a second language. In the native language method, bilingual teachers teach basic language skills in the student's native language and eventually reteach those same skills in English. ESL uses *immersion* in English language instruction to force the student to listen and speak nothing but English. The theory behind bilingual instruction is that forcing children to study such subjects as mathematics and science in a language they do not speak fluently will impede their progress in

those subjects. However, a study of bilingual education in New York City in 1994 found just the opposite—namely, that even the most recent immigrants who took most of their classes in English fared better academically than students in bilingual programs where they could speak their native tongues. The study found that only 51% of students who entered bilingual classes in kindergarten were able to test out within three years and join conventional classes. In contrast, 79% of students who entered ESL classes were able to test out within three years. Only 7% of the students who entered bilingual programs in sixth grade were able to test out within three years. The reason for the slow academic progress was traced to the need to repeat everything in both English and a second language, thus allowing only half as much material to be taught in a given time. In addition, the study found that even students who tested out of bilingual education displayed inadequate English-speaking skills compared to ESL students. New York City offers bilingual education in Spanish, Chinese, Haitian Creole, Russian, Korean, Vietnamese, French, Greek, Arabic and Bengali, at a cost of more than \$400 million a year.

In Los Angeles, where immigrant children make up 84% of the more than 600,000 students in public schools, bilingual education has produced even more disastrous results than in New York. Indeed, nearly 50% of immigrant students drop out without completing their high school education, while two-thirds of those who complete their schooling graduate without a command of English. Los Angeles teachers have to cope with a pupil population speaking 81 different languages. Bilingual education in any language is required by law in any elementary school class with 10 or more children who speak that language but have little command of English, and in any secondary school class with 15 or more such students. Unfortunately, Los Angeles has fewer than 2,000 teachers qualified to teach in any of the 81 languages. With some 6,400

classrooms requiring bilingual education under the law and 12,000 new immigrant students entering the system annually, thousands of students are growing up illiterate in both their own language and English. Fourteen percent of the student body at one Los Angeles junior high school was Samoan one year, but the principal of the school—himself a Fijian—was unable to find a qualified teacher to instruct students in Samoan.

Bill and Melinda Gates Foundation The world's largest philanthropic organization and America's largest privately funded FOUNDATION, with more than \$60 billion in assets in 2006. Founded by William H. Gates III, cofounder of MICROSOFT CORPORATION, and his wife, the Gates Foundation has invested hundreds of millions of dollars in projects ranging from environmental protection to health care. In 2006, the legendary Nebraska financier Warren Buffett more than doubled the foundation's previous assets of \$30 billion with a \$31 billion contribution.

The Gates Foundation has invested more than \$1 billion to improve the quality of American secondary education—especially in disadvantaged neighborhoods—by developing small high schools, either starting them from scratch or restructuring existing ones. By 2005, the foundation had invested in 850 new schools, including \$110 million in EARLY COLLEGES and millions more to transform existing schools in nearly 275 school districts. Among the school-district investments were \$2.3 million to Chicago public schools and \$1.4 million to Atlanta public schools. The theory behind small-school development is to lower teacher-student and counselor-student ratios to build strong relationships among teachers, students and students' families.

The results of the Gates' efforts have been mixed, however, according to the foundation's own exhaustive follow-ups. Although quality



Bill and Melinda Gates on a visit to a San Diego high school (Bill and Melinda Gates Foundation)

of teaching and student attendance rates have improved dramatically, students have displayed little or no improvement in their academic work: Reading and English language arts achievement have improved only slightly, and math proficiency has remained unchanged or actually declined to “alarmingly low” levels. Most students, however, begin the Gates schools academically behind students in other schools in the same districts, and the foundation’s school evaluators are encouraged that the “close interpersonal relationships” in the

new schools will eventually translate into academic gains.

In 2005, the year before the Buffet gift, the Gates foundation spent about \$1.36 billion of its income on a wide variety of projects, allocating 62% to global health, 21% to education, and 17% to fighting poverty. Buffett’s personal interests seemed to favor more spending in the poverty sector.

Billings, John Shaw (1838–1913) Physician and librarian, who developed the plans for

the physical plant and the operating philosophy for the Johns Hopkins (University) Hospital. In drawing up the plans for the hospital, Billings envisioned a new role for hospitals: They were to operate as medical centers offering the full range of health and health-related care and research and to serve as centers for teaching and training medical practitioners.

Born in Indiana, Billings entered the army as a surgeon at the beginning of the Civil War. In 1864, he was assigned to the office of surgeon general in Washington, D.C., where, over the next 10 years, he organized the world's first comprehensive central medical library, with more than 50,000 volumes. After helping found the Johns Hopkins Hospital in 1873, he joined the American Public Health Association. In 1890, he became professor of hygiene and hospital director at the University of Pennsylvania. One of the most widely honored physicians of his day, Billings became the first director of the New York Public Library in 1896. He designed the central building, organized the classification of books, established branch libraries throughout the city and obtained a \$5 million gift from Andrew Carnegie to pay for it all. While continuing his work at the New York Public Library, Billings also spent the years from 1902 until his death helping to organize the Carnegie Institution of Washington.

Binet, Alfred (1857–1911) French psychologist whose research with Theodore Simon to identify the ineducable retarded produced the first reliable test of intelligence and spawned the vast 20th-century intelligence, aptitude and achievement testing movement. Entitled "New Methods for Diagnosing Idiocy, Imbecility, and Moronity," the original Binet-Simon research was done for the French government in 1905 to identify children too retarded to go to conventional schools. They developed a scale—the Binet-Simon Scale—of 30 problems of graded

difficulty, each corresponding to the norm of a different level of mental abilities.

They expanded and revised the Binet-Simon Test and Scale in 1908 and again in 1911 to measure other levels of intelligence. The Binet-Simon Scale capped several decades of intense interest in child development studies and provoked a frenzy of activity by educators and psychologists in the United States and elsewhere who had been searching for years for reliable instruments to measure intelligence and educability. It set off a flurry of new norm-based tests to measure every conceivable element of mental function and thus predict the educability of every child. EDWARD L. THORNDIKE at Columbia University Teachers College and Charles Hubbard at the University of Chicago developed scales to measure achievement in arithmetic, penmanship, spelling, drawing, reading, language and a host of other skills. At Stanford University, LEWIS M. TERMAN revised the Binet Scale in 1918 to measure what he called Intelligence Quotient, or I.Q.—a new concept based on the mathematical relationship between an individual's mental and chronological age. The revised test, called the STANFORD-BINET INTELLIGENCE TEST, has been revised several times since, but has largely been replaced by the Otis-Lennon School Ability Test, which now measures intelligence of individuals from the age of two years into adulthood.

biology education A curriculum of studies of the classification, physiology and interrelationships of all living organisms. Originally designed as a secondary school and university curriculum, biology education now begins in kindergarten with the identification of familiar, everyday plants, animals, parts of the body, sense organs and functions. First grade adds the study of growing plants, experiments showing how variations in water, soil and sunlight affect growth, and the use of the experimental method. The study of animal characteristics and habitats also begins in first grade.

Second grade biology studies usually include life cycles, seasonal changes of various organisms, the maturation of seeds into plants, the production of new seeds, and the study of broad classifications of organisms. Third grade studies cover the growth stages of animals, the food chain and the interdependency of various forms of life. Biology studies of the later elementary school years include study of the scientific method, anatomy, life cycles, behavior, reproduction, instinct, learning and evolution.

Middle school raises biology studies to a new level, with a complete survey of cells, organisms and larger life systems. Studies include a survey of the plant and animal kingdoms; the classification of bacteria, fungi, plants and animals; the structure of cells; the functions of cellular organelles; elementary genetics; the role of DNA; embryology and fetal development; the function, structure and interaction of various organ systems; the major ecological systems and the structure and interrelationship of communities within.

High school biology covers most middle school studies in greater detail and depth and adds the study of such processes as photosynthesis, respiration, cell division, reproduction and heredity, along with required laboratory and field work involving the gathering, recording and assessment of data that demonstrates materials studied in the classroom.

The American Institute of the Biological Sciences has, over the years, prepared various textbooks and curricular materials it deems appropriate for elementary and secondary school students and advanced high school and college students.

Birney, Alice McLellan (1858–1907)
Cofounder and president of the National Congress of Mothers, which eventually grew into the NATIONAL CONGRESS OF PARENTS AND TEACHERS, or the national PARENT-TEACHER ASSOCIATION. Born

in Atlanta, Georgia, she earned her college degree at Mount Holyoke in Massachusetts and married a prominent Washington lawyer, with whom she had three children. As a young mother, Birney was appalled by the absence of any literature to guide mothers in raising their children. In an effort to educate American mothers and make the nation “recognize the importance of the child,” she organized a “Mothers’ Congress” of more than 2,000 mothers in Washington, D.C., in 1897. From that meeting emerged the National Congress of Mothers, with Birney as president, and its three major goals: the organization of mothers into groups to engage in child study; the support of local child-welfare agencies; and the encouragement of parent-teacher cooperation.

From the first, the congress was open to all, regardless of race, religion or social status—a radical step at the time of its founding. It was an immediate success. By 1899, it had grown to 50,000 members. In 1902, Birney resigned due to ill health, but she continued writing on matters relating to child-rearing. In 1924, the Congress changed its name to the National Congress of Parents and Teachers.

black codes Two sets of laws enacted by southern states in the 19th century, abrogating the individual liberties of African Americans. The first set was enacted at various times between 1790 and 1830 to control the black population and forestall slave rebellions. A second set of codes was enacted immediately after the Civil War, relegating former slaves to inferior legal status. Also called slave codes, the earlier laws prohibited blacks from assembly, self-defense and education. Blacks were forbidden to cross state lines or to move from county to county within a state. Even the movement of freed blacks was restricted unless they had white patrons to post bonds guaranteeing good behavior. The codes also prohibited voting by freed slaves and made it illegal

for them to testify against white people in court. It was likewise illegal for blacks to buy liquor or to work as clerks or typesetters, lest they use their skills to produce materials that might provoke rebellion. In 1831, the education and teaching of literacy to blacks in the South became a felony, punishable by fines, imprisonment or both.

Immediately following the Civil War, President Andrew Johnson restored self-rule to the South, thus putting state governments back in the hands of the aristocratic slaveowners who had been responsible for secession. In the next two years, they imposed new black codes, allegedly to protect former slaves from their own ignorance. In fact, the new codes forced blacks to go back to work on their former plantations by banning them from most other jobs. The codes also imposed literacy tests that deprived almost all former slaves of the vote. The codes were set aside in 1866, when Congress ordered resumption of military rule in the South, with a Union general assigned to govern each of five military districts and guarantee the civil rights of blacks, including the right to an education and the right to vote. Each general was also ordered to establish a system of public education for former slaves of all ages.

black colleges Institutions originally established for the education of African Americans. Originally, the products of northern white abolitionist missionaries, the first three black colleges were founded before the Civil War: Cheyney College (now Cheyney University of Pennsylvania) in 1837; Lincoln University near Chester, Pennsylvania, in 1854; and Wilberforce University, in Wilberforce, Ohio, in 1856. Immediately after the Civil War, other colleges and secondary schools for blacks sprang up throughout the South under the auspices of Union-imposed military governors (see **BLACK CODES**), white northern missionaries, indepen-

dent philanthropists and, in one case, a black educator.

Union General SAMUEL C. ARMSTRONG founded the HAMPTON INSTITUTE, now Hampton University, in Hampton, Virginia, while his student and protégé, black educator BOOKER T. WASHINGTON, founded TUSKEGEE INSTITUTE, now Tuskegee University, in Tuskegee, Alabama, in 1881. Other black colleges founded after the Civil War included ATLANTA UNIVERSITY, Atlanta, Georgia; HOWARD UNIVERSITY, Washington, D.C.; and Fisk University, Nashville, Tennessee. By 1895, there were 27 such colleges, including 13 black LAND-GRANT COLLEGES founded, along with white colleges, under the second Land Grant (Morrill) Act of 1890. Unlike the first Land Grant Act of 1862, which provided federal lands for use by states to build public colleges, the second act tacitly recognized the South's post-Reconstruction laws segregating the races.

With the exception of Tuskegee Institute and two or three other institutions with all-black faculties and administrators, almost all black colleges at the turn of the century had predominantly white faculties and white presidents. While Booker T. Washington saw Tuskegee's role as that of training skilled black craftsmen who could earn a living, the white-run black colleges were designed to train future black leaders. Indeed, a study of 1,252 black college graduates in 1900 by W. E. B. DuBois found that 54% were teachers and 17% clergymen.

By the start of the 21st century, the number of black four-year and two-year colleges had grown to more than 100, with total enrollment of about 29,000, but 40 years of desegregation and affirmative action, which changed the complexion of formerly all-white schools, had done the same to black colleges. Of student enrollment in formerly all-black colleges, 18% were nonblacks, and the blacks who had enrolled constituted only 15.6% of the total number of black college students in America. Clouding the outlook for black colleges was

the loss of many of the most academically (and athletically) gifted students to the most prestigious formerly all-white colleges and universities. The result has been a distressingly low graduation rate of 38% at black colleges, compared with a 51% graduation rate for blacks at all colleges and a 78% graduation rate for black students at academically selective colleges. Making matters still worse for black colleges, the loss of the most gifted black students has often meant the loss of students destined to emerge as the wealthiest black alumni. Indeed, the best-endowed historically black institution, Howard University, has an endowment of only \$371 million, compared with endowments in the billions of dollars at Yale, Harvard, Princeton, Stanford and nearly 50 other colleges. Howard's endowment ranked 132nd in the nation in 2004. The few other black colleges that have any endowments, such as Texas Southern, in Houston, Texas, can usually count less than \$10 million, at a time when tuition costs are rising and these institutions' student pool is made up increasingly of children from families in poverty. Indeed, more than 25% of Texas Southern students in the 2004–05 academic year came from families with annual household incomes of less than \$20,000.

(See also UNITED NEGRO COLLEGE FUND.)

Black English A variety of NONSTANDARD ENGLISH spoken by many African Americans. A subject of some controversy, Black English is sometimes described as a dialect, shaped by slavery and modern American culture, but with roots in 15th- and 16th-century Africa. Others, however, contend it is a primitive form of English, embellished by slang from sports, jazz and other music, television, comic books, advertising, the world of drugs, street crime and other areas of American life.

Sometimes called "Ebonics," Black English is characterized by a number of unique grammatical features, particularly in the use and

temporal reference of the continuous present (e.g., *I be going, you be going, he be going . . .* etc.). Most conjugations are leveled, and adverbs are often substituted for verb tenses to indicate temporal relations (e.g., *we be here yesterday . . . today . . . tomorrow*, etc.). The relative simplicity of Black English vernacular would appear to be a logical result of 200 years of slavery, during which it was a crime, punishable by imprisonment and fines, to teach literacy or standard American English to African Americans. Many black English mispronunciations such as "ax" for "ask" and "chimbley" for "chimney" date back to the colonial era before the Revolutionary War, when illiteracy reigned in white as well as black communities and mispronunciations were the rule.

Black English became the center of a controversy at the end of 1996, when the school board in Oakland, California, declared Ebonics to be a separate language with African roots, rather than a dialect. Critics charged the move was a ruse to obtain federal bilingual education funds that would not be available to improve English-language skills of the district's impoverished 28,000 black students, who made up 53% of the city's elementary and secondary school enrollment and a startling 71% of the students enrolled in special education. The U.S. Department of Education immediately rejected the Oakland move, saying, "Elevating black English to the status of a language is not the way to raise standards of achievement in our schools and for our students. The [Department's] . . . policy is that Ebonics is a nonstandard form of English and not a foreign language."

Black Muslims An amorphous, quasi-religious organization with vague, shifting tenets that stress black supremacy and the establishment of an African-American homeland in the United States. With schools in nearly four dozen cities, they represent a major educative organization that reaches beyond their membership

to millions of African Americans. Various called the American Muslim Mission, the World Community of al-Islam in the West and the Nation of Islam, the Black Muslims have borrowed and continue practicing a handful of Muslim rituals, but are otherwise tenuously connected to the Muslim faith and practices of the rest of the world. Preaching a confusing mixture of militancy and pacifism, Black Muslim leaders have, at times, called the white man "the devil," who enslaves all nonwhites, and they have blamed Jews, Italians and other American minority groups for the poor economic conditions of African Americans. The same leaders have also urged their followers to adhere to nonviolence, promising that Allah, or God, will eventually establish an independent African-American homeland in the United States. In the meantime, they urge members to adhere to strict codes of moral behavior, personal cleanliness, proper and conservative dress and Muslim rules of diet. In addition, followers are expected to cooperate economically, buying and selling from one another and avoiding, as much as possible, all trade with whites.

The origins of the Black Muslims date to the period before World War I, when blacks stepped up their demands for equal rights. In 1913, Noble Drew Ali founded the Moorish Science Temple of America. A year later, Jamaican-born Marcus Garvey founded the Universal Negro Improvement Association in Jamaica and brought it to the United States in 1916. Calling for a return of African Americans to Africa, Garvey founded the Black Star Line to provide steamship service for the anticipated black emigrants. He also founded the Negro Factories Corporation to give African Americans economic independence.

Ali died in 1929, and Wallace D. Fard took control of the Moorish Temple and founded the sect's first mosque in Detroit, where he preached, using such titles as Walli Farad and Master Farad Muhammed. Some Black Mus-

lims continue to refer to him as "Gad," "Allah" and "the Great Mahdi." Garvey, meanwhile, had been sent to prison for fraud and then deported to Jamaica. Many members of his sect joined Fard's movement, bringing with them their beliefs in black economic independence and the back-to-Africa movement. In 1933, the merged sects became the Nation of Islam, with headquarters in Chicago. A year later, Fard disappeared mysteriously, and Georgia-born Elijah Poole, who had changed his name to Elijah Muhammed, took control, with the title "the last Messenger of Allah."

With the exception of one short-lived challenger, Elijah Muhammed remained the unquestioned leader of the Nation of Islam until his death in 1975. The one challenge was that of exconvict Malcolm Little, who, after converting to the Black Muslims in prison, changed his name to Malcolm X and took charge of the Detroit mosque. In 1965, he was assassinated in New York City, allegedly by Black Muslim supporters of Elijah Muhammed. Under Muhammed, the Black Muslims grew to an organization of about 250,000 that combined the faith of Ali and Fard with Garvey's self-help principles and his vision of an African-American homeland in the United States. In an effort to convert that vision into reality, the Black Muslims rehabilitated thousands of black convicts, drug addicts and alcoholics during the 1960s and 1970s. They bought more than 15,000 acres of farmland to produce their own food and established a truck and air transport system to distribute it to members nationwide.

The Black Muslims also established religious ethnic private schools for students aged three to 18, in nearly four dozen cities across the United States, including Atlanta, Baltimore, Chicago, New York, Los Angeles and Washington, D.C. The oldest is the University of Islam No. 1, which was founded in 1932 in Detroit, the site of the original mosque. Although the schools

teach an abbreviated and Americanized version of the Islamic faith, they are far more race-oriented than religious. Using a quasi-militaristic form of discipline, with strict regulations for dress and personal grooming, the schools attempt to imbue students with self-esteem and "black pride," frequently by coloring their academic curriculum with antiwhite teachings. In addition to conventional academic offerings, the schools require black and African studies, and some schools offer Arabic.

In 1975, Elijah Muhammed died and was succeeded as supreme leader by his son Wallace D. Muhammed, who eschewed black nationalism and admitted nonblack members. In the late 1970s, a dissident faction led by Louis Farrakhan (1933–) usurped the original name Nation of Islam and reasserted the principles of black separatism.

black studies A university-level curriculum of African and African-American history, art, literature, sociology, psychology and languages. Born of the black protest movement that followed the assassination of Martin Luther King, Jr., in April 1968, black studies programs emerged after black students at predominantly white college campuses across America staged strikes that all but paralyzed school activities. Among their demands were that colleges increase efforts to recruit and enroll black students, offer more scholarships to black students, and begin expanding their curricula to demonstrate the role of blacks in American and world history. Because of its novelty—and the passions generated by the civil rights struggle of the 1960s—black studies drew thousands of nonblacks as well as blacks.

Taught, in many cases, by black activists, the programs on many campuses were grounded in politics as much as academic methodology, and as affirmative action programs increased the number of blacks on formerly all-white

campuses, the novelty of black studies began to wear thin, along with the interest of many, if not most, black as well as white students. Although 450 colleges continued to offer programs in black studies in the academic year 2005, the number of courses offered had diminished substantially, and the number of full-time professors in AFRICAN-AMERICAN STUDIES had dropped by 40% or more at many campuses. Across the nation, only 668 undergraduates earned bachelor's degrees in black studies in 2002, according to the U.S. DEPARTMENT OF EDUCATION.

Aside from the oppressive and often obsolete political content of many black studies courses, other factors have eroded much of the interest. For one thing, other departments have incorporated much of the black studies curriculum. English, music and art departments are careful to include works by blacks in survey courses, and history departments are equally careful to delineate the role of blacks in the history of the United States and the Western world. Even women's studies departments devote courses to African-American women's art, literature, history, sociology and psychology. Other departments, in other words, have left the black studies department with little to teach that is original. Dimming the future of black studies still more is the growing perception by students—black and white—that far more careers await college graduates who major in business administration or the professions than those who major in black studies.

Blair, James (1655–1743) Scottish-born churchman who, in 1693, founded and was first president of the College of William and Mary, the second college in the American colonies and the first outside New England. Educated at the University of Edinburgh, Blair was ordained in the Church of England and, after a rectorship in Scotland and three years in London, he went to Virginia as a missionary.

In 1689, the bishop of London, whose diocese included Virginia, appointed Blair his commissary, or deputy, with authority to supervise the clergy. At a clerical conference, Blair called for “the better encouragement of learning by the founding [of] a college in this country [Virginia],” which would include a grammar school, a philosophy school and a divinity school. He returned to London to present the proposal to the head of the church and to King William and Queen Mary, all of whom approved the project. On February 8, 1693, a charter was granted for the new college, and Blair was named president for life.

Fearing that the college would tempt planters away from their fields and reduce the colony’s tobacco revenues, various Virginia governors interfered with construction, and the first building, designed by Sir Christopher Wren, was finally completed in 1695—only to burn down in a disastrous fire in 1705. It was rebuilt, and by the time of Blair’s death, there were three buildings at what was, by then, a well-established institution.

Blair imposed a Scottish university curriculum at William and Mary, requiring two years for a bachelor’s degree and four for a master’s degree. As in Scotland, he allowed students to live off-campus to save costs. He also banned the English university practice of professors’ accepting fees from students.

block grants Sums of money usually given by the federal government to states, municipalities or individual organizations or schools to spend as they wish to implement a broad federal policy or program. Block grants are also awarded by state governments to municipalities and by private foundations to individuals or institutions. Although application for block grants is usually as complex as for any other grant and requires a detailed explanation how the money will be used, the grants nevertheless give grantees enormous discretion over how and whether to spend the funds.

Federal block grants in education are usually awarded under appropriations measures to implement broad policies, such as encouragement of higher education for poor students. The landmark ECONOMIC OPPORTUNITY ACT OF 1964, for example, authorized grants for college work-study programs for students from low-income families. Although the federal government set upper limits on what colleges could pay recipients, it left the dispensing of each grant to the discretion of each institution, which selects recipients and determines the type of work available and the amount paid for each job.

block scheduling The replacement of traditional 40- to 55-minute high school classes with fewer classes lasting 80 or 90 minutes. Designed to generate more classroom discussion and develop higher-order thinking skills, block scheduling has long been a standard practice in many colleges. Usually imposed on alternate days at the high school level, block scheduling has met with resistance—even strikes—by high school teachers, who face the necessity of formulating longer, more imaginative and more complex lesson plans to sustain student interest over a longer period. Moreover, teachers are also forced to display their own knowledge (or lack thereof) of the subject they teach. Block scheduling, however, invariably increases the number of students who participate in classroom discussions, with a net increase in student grade-point averages and standardized test scores.

(See also MODULAR SCHEDULING.)

Bloom, Allan (1930–1992) University of Chicago educator and harsh critic of progressive education. A colleague of Mortimer Adler, Bloom was the author of the controversial *The Closing of the American Mind: How Higher Education Has Failed Democracy and Impoverished the Souls of Today’s Students*. Bloom’s book decried excessive open-mindedness on Ameri-

can college campuses, where, he claimed, students and faculty are no longer able to make moral judgments and distinguish between good and evil, culture and barbarism. Bloom contended that unrestricted tolerance and a belief that all beauty is in the eye of the beholder has destroyed criticism, good taste and the ability to recognize genuine worth.

Bloom, Benjamin (1911–1998) University of Chicago psychology professor and educator whose pioneer research in 1956 produced a taxonomy, or classification, of children's learning processes. The thinking process, he said, begins with the material or knowledge that must be considered, and then progresses through various stages of increasing complexity—for example, comprehension, application, analysis, synthesis and evaluation. Presenting the information is usually the easiest step and making sure a child understands it is only slightly more difficult. Application of the new knowledge is far more challenging for the child, as is analyzing the information, extracting the principle behind the new knowledge and conceiving its implications.

Each stage is assigned a numerical value: knowledge, 1.00; comprehension, 2.00; and so on. Each stage is also subdivided, and each subdivision assigned a numerical value in the hierarchy of importance. Comprehension, for example, is subdivided into translation (2.10) and interpretation (2.20).

The entire thinking process, or **COGNITIVE DOMAIN**, became one of three domains of learning that Bloom and his colleagues analyzed and classified as part of what eventually became known as Bloom's taxonomy of educational objectives. The other two are the affective and psychomotor domains. The **AFFECTIVE DOMAIN** consists of learning that is controlled by feelings, emotions, attitudes, beliefs, ideals, perceptions, values, interests, appreciations and adaptations.

Bloom, David Krathwohl and Bertram Masia classified the taxonomy of affective behavioral objectives in 1964 as receiving (1.0), responding (2.0), valuing (3.0), organizing (4.0) and characterizing (5.0), with the child reacting to a stimulus by either rejecting it or perceiving it to have some value and then incorporating it into his or her own values.

Although Bloom and his colleagues recognized the existence of the psychomotor domain, it was left to Robert Kibler, Larry Baker and David Miles to classify it in 1970. They divided it into four categories: gross bodily movements (1.00), finely coordinated movements (2.00), nonverbal communications (3.00) and speech behaviors (4.00).

In addition to his work in developing Bloom's taxonomy, Bloom's research in other areas of education proved that when conditions are right, all children can learn more than they usually do in conventional school settings. By providing a group of children with one-on-one teaching and teachers who tailored instruction to each child's needs, Bloom found that 80% of his group achieved at a level reached by only 20% of the students who remained in conventional classrooms. His research disproved the conventional theory that because a few children do well at a school, conditions exist for all children to succeed and that those who fail are themselves to blame.

boarding school An elementary or secondary school where students live on campus during the school year. Often called preparatory, college prep or, simply, prep schools, the vast majority are private, although a few states maintain centrally located, public boarding schools (sometimes called "governors schools") to serve a widely dispersed rural population that might not otherwise have access to adequate school facilities. North Carolina's Governors Schools, for example, are public boarding schools for gifted students.

The nearly 300 private boarding schools in the United States are high schools, although some have middle school programs and more than 30 have junior boarding programs—some for children as early as fourth grade.

American boarding schools were a late-19th-century outgrowth of the ACADEMY movement, although the evolution of individual schools depended largely on the philosophy of the individual founder or founders. Some were modeled after English “public schools,” which had evolved from public endowed schools for the poor into strict boarding institutions for the sons of the elite. Still others emulated the U.S. Military Academy, which had been founded in 1802, and the U.S. Naval Academy, which was founded in 1845. The military boarding schools based their educational programs on the ancient Greek classical tradition combining mental and physical disciplines.

Still others traced their philosophies to the Round Hill School, a private, experimental school, founded in Northampton, Massachusetts, in 1823 by JOSEPH COGSWELL and GEORGE BANCROFT. Round Hill was the first true boarding school in the United States and the first to incorporate physical education into its curriculum. Its founders were imitating Swiss educator EMANUEL VON FELLEBERG, who had founded a boarding school in an isolated rural setting and practiced the “art of education,” which, he said, consisted of “knowing how to occupy every moment of life in well directed and useful activity of the youthful powers, in order that . . . nothing evil may find room to develop itself.” Although Round Hill ended in failure after eight years, it served as a model for hundreds of boarding schools that opened in the half century that stretched from the end of the Civil War into the beginning of the 1900s.

Some began as sectarian institutions, founded by churchmen and parents who feared that secular public schools, with their mixture of students of different religious and ethnic

backgrounds, would erode the faith of their children in their own churches. Other boarding schools, however, were the result of the increasingly high academic demands of colleges such as Yale, Harvard and Princeton, where the industrial revolution had transformed the curricula from a theological orientation to one that stressed mathematics, science, mechanics, economics, law, history, medicine, English and modern languages. As a result, such colleges began demanding better academic preparation from their applicants, and some took steps to assure such improvements by helping to found schools to prepare students appropriately. Thus, Yale president TIMOTHY DWIGHT helped found Hotchkiss School in Connecticut, while Princeton administrators were responsible for founding Lawrenceville School. Such “feeder schools” attracted students from the wealthiest American families, who sought to assure their children’s admission into the most prestigious colleges and, ultimately, into the top echelons of business and government.

At the turn of the 20th century, more “feeder schools” opened. Many established close ties to one of the elite colleges and universities of the Northeast by designing curricula geared to prepare students for those colleges. Although boarding schools opened in other parts of the United States, those of the Northeast—most of them with ties to the Congregational, Episcopal or Presbyterian Churches—were the ones that gained national reputations for maintaining the highest academic standards. Most of these schools pointedly restricted admission to children from families of wealth. None admitted students of color, and all maintained strict quotas on the number of Catholic and Jewish students they admitted—usually well under 10% of their student bodies.

Boarding schools went into a temporary decline, however, in the decades following World War II. The vast postwar industrial

expansion dispersed the American population, including many of the elite families of the Northeast that had traditionally sent their sons to boarding schools. The civil rights movement of the 1950s wrought still more changes, as activists—many of them graduates of elite eastern prep schools—embarrassed their former schools into ending racial and religious discrimination. In 1970, moreover, the Internal Revenue Service began denying tax exemptions to private schools that practiced racial discrimination. Coeducation in the 1960s forced the boarding schools to broaden their student population still further, while the growth of academically equal private day schools gave parents educational options other than sending their children away for several years.

As the academically and financially weakest boarding schools either closed or merged with stronger institutions, however, the surviving schools saw a resurgence of applications, which restored them to their former financial and academic health. Almost all are now non-sectarian, coeducational schools, and, although the feeder-school concept has disappeared, the dozen most selective boarding schools of the Northeast, which limit admission to the academically gifted, continue to send as many as half their students to the most selective colleges and universities.

Many have physical plants larger than many colleges, with academic programs that also extend beyond the scope of some colleges. No longer limited to the social elite, today's boarding schools attract students for a variety of practical reasons. The lack of adequate public educational facilities for gifted students is one reason. Another is the original Fellenbergian benefit of the isolated rural setting, where students of similar talents can devote their entire energies to school activities and not be distracted by conflicting peer pressures or conflicts at home. Still another is the opportunity to

develop special skills for which day schools may have no facilities. Many boarding schools have athletic plants that include indoor hockey rinks, tennis courts and tracks that make day-school facilities pale by comparison. Some boarding schools have extensive facilities and trained faculty for intensive instruction for students with special learning disorders such as dyslexia. Other schools have faculties trained in harboring children who have experienced family traumas associated with separation, divorce or death in the family—or the transfer of a parent to an isolated or dangerous overseas post.

Board of Cooperative Education Services (BOCES) An intermediate school organization unit in New York State to provide specialized services on a shared-cost basis to two or more school districts that cannot afford to provide such services on their own.

In some instances, BOCES may simply send its specialists to a school or, if the numbers of students needing its services are large enough, it may operate its own specialized schools, institutional facilities or programs. BOCES functions vary widely according to the districts served and their needs and include programs for the educable retarded, the retraining of learning-disabled students, education of students unable to function in an academic setting, and vocational education.

board of education The elected or appointed group with responsibility for establishing policies for and supervising schools within its jurisdictional area. Most states have two types of boards of education, a state board and a local board.

STATE SCHOOL BOARD

Depending upon the state, a state board of education (or board of regents, in some states) may have responsibility for all public school

education in the state, or for all schools of a certain type, such as primary and secondary academic schools, vocational education or higher education. Board size varies widely, with some members serving *ex officio* (the governor, for example) and the others by appointment or general election. Depending on the provisions of the state constitution and the powers of the state legislature and governor, a state board may have partial or total policy-making powers over state education, along with the power to appoint the state superintendent of schools or the head of the state department of education and to adopt the budget and personnel policies for the state department of education. State board members often represent the state in educational affairs involving the federal government.

LOCAL SCHOOL BOARD

As in the case of state boards of education, the authority of local boards of education depends on the state constitution and powers delegated to them by state authorities. In general, however, local school boards are the agents of the state in their district and they determine educational policies and budgets for their districts within the framework of state education policies. They also establish the school calendar and hire and fire and set salary schedules for the school district superintendent, school administrators, teachers and school staffs. In some states, they have the power to impose taxes on district residents to raise funds for schools. More than 95% of the school boards in the United States are elected by local residents. Most boards whose members are appointed are in major cities and in the South. Some major cities also have a city school board to serve as an intermediary between local district boards and the state board.

Qualifications for election or appointment to school boards are usually minimal. Some states fail even to require literacy to serve, while

others insist on a minimum education, taxpayer status, district residency, minimum age, and good character or parenthood.

Board of Education of Central School District v. Allen A 1968 U.S. Supreme Court decision upholding a New York State law requiring local school boards to purchase textbooks and lend them free of charge to students in private and parochial schools. The case was one of a confusing series dealing with the use of public funds in private education, including *Cochran v. Louisiana State Board of Education* (1930), *EVERSON v. BOARD OF EDUCATION* (1947), *AGUILAR v. FELTON* (1985) and *Grand Rapids v. Ball* (1985). The Court upheld the use of public funds for religious schools in the first two cases but denied them in the last two, saying they violated the ESTABLISHMENT CLAUSE of the FIRST AMENDMENT TO THE CONSTITUTION mandating separation of church and state.

Citing *Everson* as a precedent, the Court ruled that lending textbooks to students was a secular act that “neither advances nor inhibits religion,” because no funds were actually granted to the schools themselves. In *Everson*, the Court had upheld a New Jersey law under which parents were reimbursed with state funds for expenses of busing their children to private and religious schools; this was allowed because the funds were spent directly on students and not on schools.

Board of Education v. Rowley A 1982 U.S. Supreme Court ruling that reversed a lower court order to a Westchester County, New York, public school to provide a free sign-language interpreter for 11-year-old Ann Rowley, who was deaf. The Court held that the Federal EDUCATION FOR ALL HANDICAPPED CHILDREN ACT OF 1975, mandating “free appropriate education” for all disabled public school children, only required schools to make public schools accessible to the handicapped. The law did not require schools to

provide individual services “to maximize each child’s potential commensurate with the opportunities provided other children.”

board of overseers Depending on the institution, either a synonym for a board of trustees, with authority to govern a school or college, or an honorary board made up of major financial donors, with no administrative authority.

board of regents A state board of education, which, depending on the state, may be appointed to govern an individual state university, a group of state universities or the state’s entire system of higher education.

Board of Regents of State Colleges v. Roth A 1972 U.S. Supreme Court ruling that a publicly employed teacher only has the right to a hearing when discharged if formal or de facto tenure has been conferred. The case involved David Roth, who had been hired for a fixed term of one year and was discharged without a hearing at the end of that year by Wisconsin State University.

Board of Regents v. Southworth A unanimous U.S. Supreme Court decision in 2000, giving public colleges and universities the absolute prerogative to impose and collect mandatory student extracurricular activity fees from all students, regardless of whether they agree or disagree with the goals of any of the student groups or activities supported by such fees. All college students are obliged to pay student activities fees amounting to several hundred dollars annually, in addition to charges for tuition, room and board. The universities and colleges use about 80% of such fees for non-controversial purposes, such as intramural sports and student health services. The remainder covers costs of a wide variety of student organizations, ranging from student publications to social or political action groups. Three law stu-

dents at the University of Wisconsin claimed—and the lower courts agreed—that mandatory fees required students to provide support for political and other activities to which they objected and which were a form of “compelled speech”—in effect compelled indirect participation—and represented a violation (albeit, in an inverted way) of their FIRST AMENDMENT rights of free expression.

Conservative student groups across the United States have long resented what they perceive as the dominance of liberal discourse on college campuses and have long claimed a constitutional right not to contribute money to such campus activities as gay rights, animal rights and other causes. The University of Wisconsin hosts about 200 student activities ranging from the International Socialist Organization to the Future Financial Gurus of America. Such organizations apply for funds from the pooled activities fees to cover cost of printing and posting flyers and leasing university space and facilities.

In ruling against the three students, the Supreme Court held that the purpose of the university is to facilitate and expose all its students to a wide range of speech. Indeed, “its mission is well served,” said the majority opinion, “if students have the means to engage in dynamic discussions of philosophic, religious, scientific, social and political subjects in their extracurricular campus life outside the lecture hall.” The university is, therefore, “entitled to impose a mandatory fee to sustain and open dialog to these ends.” The Court imposed a “cast-iron viewpoint neutrality requirement” in the way the university allocated student fees, thus giving groups representing the entire range of viewpoints equal access to activities fees.

board of trustees The governing body of a private school, college or university. Equivalent to the board of directors of a corporation, most trustees are elected from among alumni, parents or major contributors to the institution, although

the chief administrator of the institution usually serves *ex officio*. Depending on the by-laws of the institution, the board has responsibility for appointing the president or headmaster/headmistress of the institution, setting long-term policies, approving the budget and supervising fund-raising and institutional investments. Like corporation boards, boards of trustees delegate almost all administrative functions to their appointed school administrators.

Bobbitt, John Franklin (1876–1956) A University of Chicago professor of educational administration who pioneered school survey techniques and curriculum development based on social utility. Operating on the principle that a curriculum should prepare a student for real-life activities, Bobbitt used job analysis and identification of specific job skills and behavior to develop specific curricula. In the years before World War I, he helped conduct curriculum planning surveys in Cleveland, San Antonio and Denver, and prior to that helped develop a curriculum for schools in the Philippines.

Bob Jones University v. United States and Goldsboro Christian Schools Inc. v. United States A landmark 1983 U.S. Supreme Court decision that extended the principle of racial integration to private schools. In its decision, the Court ruled that the Internal Revenue Service had the power to deny tax exemptions to private schools that practiced racial discrimination. Although the federal tax code provided tax exemptions for nonprofit “religious, charitable or educational” institutions, the IRS had started denying such exemptions to racially biased schools in 1970. The all-white Bob Jones University of Greenville, South Carolina, and Goldsboro (North Carolina) Christian Schools, a group of fundamentalist private schools that denied admission to blacks, both challenged the IRS. Writing for the majority, Chief Justice Warren Burger explained, “Entitlement to tax

exemption depends on meeting certain common law concepts of charity—namely, that an institution . . . must serve a public purpose and not be contrary to established public policy.

“There can no longer be any doubt,” he went on, “that racial discrimination in education violates deeply and widely accepted views of elementary justice. It would be wholly incompatible with the concepts underlying tax exemption to grant the benefit of tax exempt status to racially discriminatory educational entities.”

Bode, Boyd Henry (1873–1953) A disciple of John Dewey who, in his influential book *Fundamentals of Education* (1921), attempted to translate Dewey’s philosophy of education into practical terms. “Progressive” education, he contended, did not mean capitulation to self-indulgence as some progressivists, in a total misinterpretation of Dewey’s theories, claimed.

Bode countered strongly that children could not, as some pseudoprogressivists contended, be left to follow their own interests “without sufficiently . . . directing the activities of pupils towards a preconceived end.” Children, he said, are ignorant of the vast amounts of available knowledge, and the job of the school is to direct them toward it.

Like Dewey, Bode believed that development of individual creative intelligence, knowledge, thought and problem-solving skills should be the primary goals of schools in a democratic society. Moreover, he believed (as did Dewey) that the school should be an “agency for (social) progress and reform” that teaches its students democracy. Teaching nationalism rather than democracy, he warned, might prepare children for “intolerance and heresy hunting.”

Born in Illinois, Bode taught philosophy at the Universities of Wisconsin (1900–09) and Illinois (1909–21), but spent most of his career,

from 1921 to 1944, as professor of education at Ohio State University.

Boehm Tests of Basic Concepts A test to determine mastery of common abstract concepts deemed essential for early school achievement. Designed for students in kindergarten through second grade, the test is usually administered by classroom teachers, special education teachers and speech/language clinicians to measure a child's grasp of basic relational concepts such as more-less, first-last and same-different, as well as concepts of space, quantity and time.

Bond, Horace Mann (1904–1972) African-American educator and pioneer researcher in black educational history. His studies on the origins of black Ph.D.s in the United States established the essential connection between a stable family-church-school social configuration and academic achievement. He found that a statistically significant high percentage of black Ph.D.s had come from communities where a tightly knit configuration of black family, black church and local schools had provided consistently high expectations for the community's youngsters and specifically encouraged academic achievement. Bond's studies meshed with other studies showing an exceptionally high number of juvenile delinquents emerging from neighborhoods characterized by poverty, broken homes, churches with declining memberships, elevated rates of student school-absenteeism and peer groups that denigrated academic achievement while engaging in profitable illegal activities.

bookmobile A 20th-century mobile library on a truck or van that served as a branch of a public library in areas too distant for residents to avail themselves of regular library services. The earliest bookmobile may have been Mr. Joshua Thomas's horsedrawn book wagon, which started carrying books to outlying areas of

Washington County, Maryland, in 1905. Jeeps carried books to servicemen at camps across the United States during both World Wars. The increase in car ownership after World War II decreased the need for bookmobiles, and the development of the Internet rendered them all but obsolete by the end of the 20th century.

There were two standard types of bookmobiles: One was a tractor-trailer unit with 5,000 to 7,000 volumes that could be detached and left parked in an area for a fixed time. These also served as temporary replacements for libraries undergoing renovation. The second, smaller type of bookmobile was in a van with 1,500 to 4,000 volumes that visited one or more different communities every day.

Book of Common Prayer A book of rites and ceremonies constituting the official liturgy of the Church of England. The original *Book of Common Prayer* (1549) also established a uniform system of instruction to be conducted by the clergy throughout the realm. Besides rites and ceremonies, the *Book of Common Prayer* included an authorized catechism, an authorized book of homilies and an authorized primer. The Long Parliament of the 1640s ended its use, but Charles II restored it to official use in 1660. Although unacceptable to the Puritans of New England, it was a part of the curriculum in Virginia and in other colonies where the Church of England predominated.

Boston Latin School The first school founded in the American colonies. While the Plymouth colony left education to the home and the church, the Massachusetts Bay colony asked Philemon Pormont to open a Latin grammar school in Boston on April 13, 1635. Latin grammar schools accepted only boys of nine or 10 who could read and knew English grammar and basic mathematics. The Latin grammar school curriculum was designed to prepare boys for college and required four to five years

of study of Latin and Greek, coupled with history, geography, geometry, algebra and trigonometry. The founding of Boston Latin School was followed in quick succession by the founding of similar schools in Ipswich and Charlestown in 1636, in Cambridge in 1638 and Dorchester in 1639. By the end of the first decade of settlement, Massachusetts had schools in 22 towns, and schools in New Haven and Hartford quickly followed in 1642.

Boston Latin became one of New England's most renowned schools, eventually helping to educate some of the foremost American colonialists, including BENJAMIN FRANKLIN. Franklin, however, found the curriculum stifling and left after a year to study a more "American" curriculum, and Boston Latin and other schools eventually became the center of a bitter debate over how much schools should teach of life in ancient times and how much of life as it was and would be in the American colonies. The debate over the merits of a classical and practical curriculum continues to a certain extent to this day at many private educational institutions. Boston Latin, however, is now a public school with a conventional public school curriculum.

Boston Manufacturing Company of Waltham An early 19th-century yarn-making factory that organized a new form of apprenticeship training designed for mass production factory work rather than individual craftsmanship. Until the organization of the Boston Manufacturing Company in 1813, most New England textile mills were small shops with simple equipment that children could operate. Mills either hired children by themselves or entire families, with parents expected to supervise and train their children.

The Boston plant, however, introduced more complex power looms that required adults to operate them. The company hired agents to comb the countryside, recruiting young women aged 18 to 22 and willing to

come to Waltham to work in the plant and live in carefully supervised "family-style" boarding houses, which were owned and operated by the company. For the era, the company offered attractive wages that the young women could save toward a dowry or send home to help their families. Although the Boston mill did not have a formal system of training, beginning workers simply tended the machinery and gradually gained more knowledge from older workers.

Boston Museum of Fine Arts One of the first public museums in the United States to dedicate itself primarily to the education of the public at large. Regardless of their stated purposes, the first museums in the United States were profit-making, proprietary enterprises that cloaked education with entertainment. The first public museums to rise in the U.S. after the Civil War did little more in terms of education. Their curators saw themselves as preservers, custodians and researchers rather than as educators, and they often charged entrance fees that discouraged public entry. The museums became, in effect, warehouses and laboratories guarding materials they believed too complex for the average citizen.

Like the ART INSTITUTE OF CHICAGO, the Boston Museum of Fine Arts was an exception. It was created by an act of the Massachusetts legislature "for the purpose of . . . affording instruction in the fine arts." Founded in 1870, it opened in 1876, and its trustees worked immediately to "elevate the public taste." In addition to operating a School of Drawing and Painting, it granted free admission to the public two days a week to encourage their use and appreciation of the museum.

Boston Public Library The first urban public library in the United States and a model for hundreds of others that were built in the ensuing 25 years. It was not, however, the first pub-

lic library, the first free library having opened in Peterboro, New Hampshire, in 1833, followed by 25 others in other small communities. The Boston Public Library's trustees, however, were the first to propose building a major city institution that would rival the various college libraries reserved for scholars and students. Harvard College Library, for example, was the largest library in the United States at the time, with close to 150,000 volumes, and Yale College had more than 50,000, but neither shared either its facilities or books with the public.

Saying that the progress of education required each American to "be mainly his own teacher," the Boston library trustees asked that the city "extend some reasonable aid to the foundation of a noble public library, to which the young people of both sexes, when they leave the schools, can resort for those works which pertain to general culture, or which are needful for research into any branch of useful knowledge." The opening of the Boston Public Library in 1854 marked the beginning of the "library movement" that saw 275 major public libraries built between 1850 and 1875.

bottom-up model of reading A system of reading instruction based on the theory that the learning of reading takes place by piecing together small parts, or phonic sounds, to form, first, a letter sound, and, eventually, a word sound. Learning takes place, in other words, from the bottom up, from sound to symbol to meaning. The model is in contrast to the TOP-DOWN MODEL, in which children learn entire words by sight, by the distinctive shape of the word, rather than individual letters. Such children must then gradually take the word apart to learn each letter and its sound. Experienced teachers recognize, however, that all children use both methods to some degree. Some children learn sight words more easily than others and instinctively distinguish words

by the total shape of the word—*pizza*, for example, as opposed to *cat*. Other children, however, seem unable to distinguish entire words when first learning to read and are almost totally dependent on "sounding out" the word, letter by letter.

(See also PHONICS; WHOLE LANGUAGE.)

Boyer, Ernest L. (1928–1995) American educator, researcher and administrator who, as president of the CARNEGIE FOUNDATION FOR THE ADVANCEMENT OF TEACHING, wrote *High School: A Report on Secondary Education in America*, a landmark study published in 1983. *High School* called for sweeping reforms of public school education in the United States, and recommended specifically "that the current three-track system—academic, vocational and general—be abolished. It should be replaced by a single-track program, one that "provides a core education for all students . . . , keeping options open for both work and further education."

Boyer defined "a core of common learning" as a high school program of required courses in writing (1 year), rhetoric and speech (½ year), literature (1 year), the arts (½ year), foreign languages (2 years), United States history (1 year), Western civilization (1 year), Nonwestern studies (½ year), civics (1 year), physical science (1 year), biological science (1 year), mathematics (2 years), technology (½ year), health (½ year), a seminar on the world of work (½ year) and a senior independent project of original research and study (½ year). Boyer's core curriculum would expand the number of required courses in high school from one-half to two-thirds of the total units required for graduation and end the "cafeteria-style" curriculum (see CURRICULUM, CAFETERIA-STYLE) in many high schools that gives students almost total freedom of choice about their courses of study. As a result of granting such broad freedom, physical education and health education, work experience outside school,

remedial math and English and “personal service and development courses” accounted for 25% of the credits of American high school students at the time of Boyer’s report.

Boy Scouts of America One of many organizations for children formed at the beginning of the 20th century by members of the PROGRESSIVE EDUCATION movement to provide educational experiences that would supplement the work of schools during the days and weeks when school was not in session. Founded in 1910, adult leaders of the Boy Scouts of America sought to channel and shape the “play” instincts of young boys and the “gang instincts” of adolescent boys into educationally enriching and socially constructive activities that would ultimately produce socially responsible adults. Geared to the needs of rural children, the founding of the Boy Scouts followed by four years the founding of the Boys’ Clubs of America for urban youngsters. In 1912, two similar organizations for girls were founded—the Camp Fire Girls and the Girl Scouts.

All four groups were secular models of organizations such as the Young Men’s Christian Association, the Young Women’s Christian Association and the Cadets of Temperance, which religious groups had set up for youngsters in the previous century. Like those predecessor organizations, the Boy Scouts, Girl Scouts and other secular groups provided adult leaders with handbooks on how to operate local chapters, and they published informative, entertaining periodicals such as *Boys’ Life* and *The American Girl* for the youngsters.

Scouting for boys actually began in England in 1907 as a result of the writings and efforts of Lord Baden-Powell, but the American organization’s rules differed substantially from those of comparable overseas groups, which did not permit racial and religious discrimination. Many local scout groups in the United States were formed by church groups that limited

membership to children of families in that church. Such discrimination caused a sharp decline in Boy Scout membership, as new activities such as Little League baseball and other nondiscriminatory after-school recreational activities attracted children from middle- and upper-middle-income families away from scouting. To halt the decline, the Boy Scouts launched an outreach program in 1991 to attract boys they had previously rejected—sons of sharecroppers in disadvantaged rural areas; disadvantaged children from urban slums; and immigrant children. As part of the “Scoutreach ’91” program, *The Boy Scout Handbook* was translated into 14 different languages. In addition to ending racial and religious discrimination, Scoutreach also modernized career exploration programs by substituting computing and family life for blacksmithing and beekeeping as activities leading to merit badge rewards. By 2000, Scoutreach had rebuilt enrollment to more than 4 million—still far short of the more than 6.5 million members it boasted in 1972, however.

Boys Town Originally, a pioneering residential institution for homeless, abandoned, neglected and emotionally troubled boys. Now called Girls and Boys Town, Boys Town was founded in 1917, when a Roman Catholic priest, Father Edward J. Flanagan (1886–1948), opened his own home in Omaha, Nebraska, to homeless boys. He expanded those initial accommodations into a campus of 1,400 acres, with 65 buildings, a 1,000-acre farm, a middle school and high school and a Vocational Career Center. Now coeducational, the institution houses about 400 children of all races and ethnic and religious backgrounds in cottages of about 10 children each, with husband-wife teams of cottage parents. From its founding until 1977, when it turned co-ed, Boys Town had accommodated about 20,000 boys. Off campus, the institution maintains a national

hotline for troubled children to call to discuss their problems and a network of homes in cities and suburban communities, where cottage parents supervise groups of up to about a half-dozen children, who attend local schools and lead otherwise normal lives.

Bradley v. Richmond School Board The last of three U.S. Supreme Court decisions between 1963 and 1965 that effectively ended resistance to school desegregation in the South. The *Bradley* decision applied all previous desegregation rulings to public school teachers as well as students. Prior to *Bradley*, the Court had ruled in *Griffin v. County School Board* (1964) that Prince Edward County, Virginia, had violated the law by closing its public schools to avoid desegregation and then giving white parents grants and tax credits to help them pay tuition in all-white private schools. In 1963, in *Goss v. Board of Education*, the Court ruled a Knoxville, Tennessee, scheme that allowed pupils to transfer out of schools

where their race was a minority to schools where they were a majority. Each of the local ordinances that the Court struck down in the three cases represented a decade-long effort of “massive resistance” by white officials in the South to bypass the sweeping DESEGREGATION order of the 1954 *BROWN V. BOARD OF EDUCATION OF TOPEKA*.

braille A system of reading for the blind, using raised dots as symbols for each letter. Developed in France in 1824 by Louis Braille (1809–52), the characters were derived from a “point writing” system, using embossed dots and dashes for coded army messages.

Blind at the age of three, Braille was sent as a foundling to the National Institute for the Young Blind in Paris. After developing into an accomplished organist and cellist, Braille returned to the institute to teach. At the time, only 14 books existed for the blind, all of them in embossed alphabetical characters that few blind people ever learned to master.

1	2	3	4	5	6	7	8	9	0
a	b	c	d	e	f	g	h	i	j
⠠	⠡	⠢	⠣	⠤	⠥	⠦	⠧	⠨	⠩
k	l	m	n	o	p	q	r	s	t
⠪	⠬	⠭	⠮	⠯	⠰	⠱	⠲	⠳	⠴
u	v	x	y	z	w				
⠵	⠶	⠷	⠸	⠹	⠺	⠻			

Braille alphabet and numbers (*TeleSensory, Mountain View, Calif.*)

Braille characters are based on a configuration of six large raised dots referred to as the braille cell. To help children learn the system, he numbered each position of the cell as follows:

- (1) . . (4)
- (2) . . (5)
- (3) . . (6)

Each character in the alphabet is formed by removing one or more dots from the basic configuration, thus allowing the reader to distinguish each from the others by the number and position of the remaining dots. The first 10 characters serve as both letters and numerals—that is, a, 1; b, 2; c, 3; etc., through j, 0. In addition to the 26 letters of the alphabet, a separate character serves to indicate a capital or upper case letter and a second separate character indicates whether the character that follows is a numeral or a letter. In 1942, a machine called a braille writer was developed to produce braille mechanically.

Brainerd Mission The first educational institution designed to assimilate Indians into white, Protestant, American society. Founded in 1817, in Chickamauga, Georgia, the school served as a model for almost all 19th- and early 20th-century schools built by the federal government on Indian reservations.

Named after David Brainerd, an 18th-century Presbyterian missionary to the Seneca and Delaware Indians, the Brainerd Mission was a joint venture of the American Board of Commissioners for Foreign Missions, the U.S. government and the Cherokee Nation. Under the Treaty of Holston in 1791, the federal government had provided funds to the Cherokee to help them convert from a hunting to an agricultural economy. In response to a 1796 invitation by President Washington, about 15,000 to 20,000 Cherokee settled in about 40 villages in a region covering parts of Georgia, Tennessee and the western Carolinas. Although Moravian

and Presbyterian missionaries had set up a few elementary religious schools, they were of little practical value in helping the Cherokee become successful farmers. In 1817, the Cherokee sent a delegation to Washington to ask governmental help in providing more advanced education to Cherokee children.

Washington agreed to build a schoolhouse and living facilities for a teacher and to provide plows, hoes, spinning wheels and other equipment to teach children agriculture and the domestic arts. The American board provided teachers, and, within a year, the school not only boasted a schoolhouse and living facilities for teachers, but five student dormitories, a kitchen, dining hall, gristmill, sawmill, barn, stable and 50 acres under cultivation. A fully self-sustaining institution, Brainerd teachers taught exclusively in English and gave each student an English name to replace his or her Indian name. The school used the LANCASTERIAN SYSTEM of instruction, developed by Quaker educator Joseph Lancaster to teach large groups of students by drilling older students in their lessons and assigning the best as monitors to teach younger students. The school day at Brainerd Mission extended from 5:30 A.M. to 9 P.M., with its 180 students either in class or working throughout the day. Boys did manual labor, and girls practiced all the domestic arts. Evenings were spent at prayer or in religious studies. Within 10 years, eight other Brainerd-type schools had arisen among the Cherokees, and, as the Indians were expelled from the East into the western territories, the Brainerd model went with them and remained the standard school for Indians for more than a century thereafter.

(See also AMERICAN INDIANS.)

Bray, Thomas (1656–1730) English-born Anglican priest responsible for establishing the first lending libraries in the American colonies. He also founded the Society for Promoting Christian Knowledge (SPK), which grew into

the influential SOCIETY FOR THE PROPAGATION OF THE GOSPEL IN FOREIGN PARTS (SPG).

Bray only spent three months in the colonies as commissary, or chief representative of the Church of England in Maryland, and, in effect, the clerical ruler of the region. Prior to his arrival, however, he had developed what he considered an ideal library of about 1,000 books that he described in his own work *The Country Curate's Library* (1699). Designed partly to propagate Anglicanism, the library was heavily weighted with religious texts, but also included a large number of books on politics, law, history, mathematics, medicine, trade and commerce, carpentry and home building, poetry and other practical and entertaining works.

Bray formed SPK to raise funds to establish libraries in the colonies and encourage education and conversion to the Anglican church of the children in the colonies. Bray's first library—and indeed the first lending library on the American continent—was established in Annapolis, Maryland, in 1696, with 1,095 volumes. By the time Bray arrived in America in early 1700, more than 30 similar libraries had been established in Boston, New York, Philadelphia and other major cities, as well as in rural areas of Maryland.

By then, many of the libraries had also assumed parallel functions as schools. Recognizing the need for missionary teachers, he returned to England in the summer of 1700 to form the SPG, with the archbishop of Canterbury as its head. The SPG won the full financial support of both the church and the crown and, in the ensuing seven decades, it established about 170 schools stretching from the northern reaches of New England to Georgia and South Carolina and westward into Pennsylvania. More than 80 teachers and 18 religious instructors helped teach thousands of children to read, write, calculate and pray in English and assured the place of English as the dominant

language in colonies peopled by French, Dutch, German, Native Americans and African slaves, as well as English. The SPG remained a major force in education until the end of the Revolutionary War, when American colonists severed their official ties to the mother church as well as the mother country.

Bread Loaf School of English A degree-granting graduate summer school of literature studies and writing courses for teachers of English. Founded in 1920 at Bread Loaf Mountain on the campus of Middlebury College, in Vermont, the school was designed to provide English teachers with an in-depth knowledge of composition, literary criticism, expression and techniques for teaching writing skills. At the time, nearly half the English teachers in American public schools lacked college degrees, and almost all lacked the knowledge and skills to teach writing skills and literary interpretation. (Even today, many English teachers with teaching certificates and degrees in pedagogy and educational psychology lack skills in creative writing, rhetoric or literary criticism.) The original Bread Loaf curriculum offered courses in creative writing, dramatic production, English and American literature, public speaking and debate and methods of teaching English. Today's Bread Loaf curriculum has expanded to include a wide range of courses leading to master of arts and master of letters degrees in English and a master of modern language degree in French, German, Italian, Russian and Spanish. Held at St. John's College in Santa Fe, New Mexico, and Lincoln College, Oxford, England, as well as at Middlebury, Bread Loaf enrolls several hundred students each summer, from the end of June to mid-August. Thirty fellowships for rural teachers from Alaska, Arizona, Mississippi, New Mexico, South Carolina and Vermont are available from the DeWitt Wallace-Reader's Digest Fund. Bread Loaf has spawned similar projects across the United

States to expand the writing skills of English teachers.

(See also NATIONAL WRITING PROJECT.)

Briggs v. Elliot One of four separate cases consolidated by the U.S. Supreme Court into the single landmark case known as *BROWN V. BOARD OF EDUCATION OF TOPEKA*. In the decision it handed down in 1954, the Court overturned an earlier Court ruling that allowed states to segregate the races in so-called separate but equal schools and other public facilities.

Brinsley, John (d. 1633) English preacher-schoolmaster and author of *A Consolation for Our Grammar Schooles* (1622), which became a standard pedagogical guide for Puritan schoolmasters in the colonies. Brinsley's thesis was that the primary obligation of schoolmasters was to promote piety. They were to do this in two ways: directly, by teaching all children to read Scripture, and indirectly, by training a select group of gifted children for the ministry so that they would carry the word to parishes throughout the colonies. Brinsley, who designed his book for use in "all ruder countries and places," warned that Jesuits were already training the most gifted children for missionary work and that the only way to save the English from being "consumed by their [Jesuit] furnace" was for schools "to prepare the way."

British Infant School A British primary school that uses play as the central activity for teaching children between the ages of five and seven or eight. Developed in the late 1960s, British Infant Schools sparked the expansion of so-called OPEN EDUCATION in the United States. Somewhat loosely based on the theories of Swiss psychologist JEAN PIAGET, the British Infant School proceeds on the theory that children cannot learn a specific activity until their physical, intellectual and emotional develop-

ment permit. Thus, rather than grouping children by age, ability or other conventional basis, British Infant Schools allow children to group themselves instinctively. Groups are usually small and tend to have children whose ages may differ, but whose reasoning abilities tend to be similar. Learning activities are self-directed, with teachers simply suggesting a general theme as a play activity and serving as informal guides to help children learn whatever they need to know to play successfully. Unlike the methods prevailing at conventional schools, student learning is never segregated into distinct times for learning to read, write or calculate. Instead, students learn many skills simultaneously. Instruction is informal, and students learn at their own pace in a nonthreatening environment.

Brookwood Labor College One of several pseudo "colleges" established by American labor unions and the Socialist Party during the years between World Wars I and II. Modeled after England's Workingmen's College in London, Brookwood was a noncredit institution organized in Katonah, New York, about 50 miles north of New York City, by Socialist leaders. The school offered a limited curriculum in social history and philosophy as well as practical classes in union organizing, striking and other labor tactics. The college also recruited writers and actors to produce prolabor dramatic and literary works. The college closed in 1937.

Brougham, Henry Peter, first Baron Brougham and Vaux (Lord) (1778–1868) Scottish-born jurist, political leader and social and educational reformer whose innovations revolutionized British and, eventually, American education. A founder of London University, he was a member of Parliament for 16 years and author of the sweeping Public Education Bill to extend schooling to the poor as well as rich. Arguing against the common notion of

divine determination of a person's station in life, he insisted that the poor were as educable as the rich and that the question was "no longer whether to educate commoners but how to do it."

Brougham encouraged development of public libraries, public forums and vocational schools, which were the forerunners of the state school system in England. He was a cofounder of the London Institute for the Diffusion of Science, Literature, and the Arts, which offered lectures on each of those subjects, as well as philosophy, to audiences of mechanics, artisans and other commoners. Brougham's article in the *American Journal of Education* about the institute and other, similar ANDERSONIAN INSTITUTIONS for workingmen inspired Josiah Holbrook to found the AMERICAN LYCEUM. His theories on education also inspired the founding of schools in Switzerland by PHILIPP EMANUEL VON FELLENBERG and JOHANN HEINRICH

PESTALOZZI, who proved that all normal, healthy children had equal, almost unlimited capacities to learn.

Brown University The earliest American college to abandon religious affiliation as a requirement for admission. Founded in 1764 as the College of Rhode Island, the school adopted the name of Brown in 1804, in recognition of a large gift by Nicholas Brown, an alumnus and son of one of the school's founders.

From its beginnings, Brown has been one of the most liberal institutions in the United States. Like other early American colleges, Brown was founded as a training school for ministers—a Baptist answer to Congregationalist Harvard and Yale, Presbyterian Princeton and Anglican (later Episcopalian) Kings College (later Columbia). Unlike those other colleges, however, Brown's original charter banned "religious tests" for entry into the college and



Brown University, in 1770, when it was still called the College of Rhode Island and had just moved to Providence from Warren, where it had been founded six years earlier. It was renamed in 1804 in honor of a benefactor, alumnus Nicholas Brown. (*Library of Congress*)

declared “that the Sectarian differences of opinions shall not make any Part of the Public and Classical Instruction.”

In 1827, FRANCIS WAYLAND became Brown’s fourth president and, over the next 28 years, introduced innovations that revolutionized American college education by modifying curricula to serve “the wants of the whole community.” Until then, major colleges in the United States and Europe had only prepared men for the “learned professions”—law, medicine, divinity and teaching. All students studied the same curriculum—the classics, mathematics and natural and moral philosophy—with each student studying four years of each subject and no others. Wayland expanded the curriculum to embrace a wide variety of other courses of varying lengths, including chemistry, physics, geology, English language and rhetoric, political economy, history, law, pedagogy, agriculture and the arts. Moreover, the curriculum was reorganized so that “in so far as it is practicable, every student might study what he chose, all that he chose and nothing but what he chose.” Instead of the standard, general bachelor’s degree, Brown now offered the first bachelor’s degrees in specific subjects.

As Brown expanded its campus in the last half of the 19th century and added intercollegiate sports, it joined seven other northeastern colleges to form the “IVY LEAGUE” intercollegiate sports group. In 1891, Brown established Pembroke College as a coordinate undergraduate college for women, but the two merged into a single university in 1971.

As the Vietnam War provoked student uprisings on college campuses across the United States in the late 1960s, Brown joined other colleges in abandoning its role as *in loco parentis* and turned responsibility for student conduct and curriculum planning to the students themselves. The result was the so-called New Curriculum, which eliminated traditional distribution and course requirements and majors, as well as

traditional grading. At the time, the number of courses a student had to pass to receive a degree was reduced from 36 to 26, all of which could be taken on a pass-fail basis. Brown was not unique in making such changes, but while most other private colleges eventually restored some semblance of traditional course distribution and grading requirements, Brown held relatively firm to its student-centered policies. Even in 2000, the university required only that students pass 30 of 32 courses to graduate (including 8 to 21 courses in the major), and there were no distribution requirements or specific required courses.

Brown v. Board of Education of Topeka The landmark 1954 U.S. Supreme Court decision that outlawed racial segregation in American public schools and signaled the end to racial segregation in all public facilities in the United States. Although popularly referred to as one case, *Brown* was actually a consolidation of four different cases, each of which was, by itself, the culmination of 16 years of litigation involving five additional cases heard before the Supreme Court. Moreover, there were actually two *Brown* cases, usually referred to as *Brown I* and *Brown II*. In *Brown I*, handed down in 1954, the Court declared racial segregation in schools a violation of the Fourteenth Amendment of the U.S. Constitution. The ruling stated, “In the field of public education, the doctrine of ‘separate but equal’ has no place. Separate educational facilities are inherently unequal.” A year later, *Brown II* held local school districts responsible for implementing *Brown I* and ordered them to desegregate schools “with all deliberate speed.”

Brown v. Board of Education of Topeka was a consolidation of lawsuits brought by the National Association for the Advancement of Colored People against school boards in South Carolina, Virginia and Delaware, as well as Kansas. The other cases were, respectively, *BRIGGS v. ELLIOT*, *Gebbart v. Belton* and *DAVIS v.*

COUNTY SCHOOL BOARD. All four cases and *Brown II* had their origins in the mid-1930s, when a group of NAACP legal strategists headed by THURGOOD MARSHALL devised a long-term strategy for ending segregation. At the time, race riots were breaking out in cities across the United States. Marshall, who later became a U.S. Supreme Court justice, recognized that neither the legal nor social system in the U.S. was prepared to sweep away centuries of racial segregation. Rather than attempt the impossible, Marshall and his colleagues devised a long-term scheme to lay a legal groundwork of court decisions that would undermine the "separate but equal" doctrine, which had been established in the historic *PLESSY V. FERGUSON* decision in 1896. In that decision, the Court had ruled that states had the constitutional right to segregate the races as long as it provided "separate but equal" facilities. The result was the passage of laws in 17 states and the District of Columbia that segregated blacks from whites in all public facilities, including schools. The states that passed such laws were Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, Missouri, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia. Although they passed no laws mandating segregation, eight states (Illinois, New Jersey, Pennsylvania, Arizona, Indiana, Kansas, New Mexico and Wyoming) permitted it at the discretion of local communities. By the end of World War II, only 12 states had banned segregation.

Marshall began the campaign to undermine *Plessy* in 1938, with *MISSOURI EX REL GAINES V. CANADA*. In that case, the Court held that when a state provides legal training to any of its citizens, it must do so for all, and that providing tuition assistance to black students to attend law school out of state did not meet the same standard. In 1940, the case of *ALSTON V. SCHOOL BOARD OF THE CITY OF NORFOLK* produced a ruling that different salary schedules for

equally qualified black and white teachers with the same job assignments was a violation of the due process and equal protection clauses of the Fourteenth Amendment. In 1948, the NAACP won *SIPUEL V. BOARD OF REGENTS OF THE UNIVERSITY OF OKLAHOMA*, in which the Court ruled that Oklahoma had to provide legal education to blacks as well as to whites and to do so for blacks as soon as it offered such education to whites. Two years later, the NAACP won a decision in *Sweatt v. Painter* that a separate law school for blacks in Texas did not provide the same legal education as that given to whites at the University of Texas Law School, where black entry was prohibited. And in the same year, 1950, the Court also ruled in favor of the NAACP in *McLaurin v. Oklahoma State Regents*. In that case, the Court held that the state had denied equal protection under the law to a black student whom a graduate school in education had segregated from white students.

Recognizing that the *Sweatt* and *McLaurin* decisions had both held segregation to be a denial of equal rights under the Fourteenth Amendment, Marshall and his NAACP legal team believed they had enough precedents to overturn *Plessy*. To help them do so, KENNETH B. CLARK, a distinguished sociologist who, like Marshall, was a graduate of the all-black HOWARD UNIVERSITY, documented the harmful social and educational effects of segregation on black children. On May 17, 1954, the all-white U.S. Supreme Court ruled unanimously: "Separate educational facilities are inherently unequal."

(See also SEGREGATION.)

Bruner, Jerome Seymour (1915–) American psychologist and theorist noted for his research and writings on the learning process. A successor to Swiss psychologist JEAN PIAGET as a leader in the field of cognition, Bruner depicted learning and the acquisition of knowledge as a three-part process involving "enactive knowledge," "iconic knowledge" and

“symbolic knowledge.” Enactive knowledge is acquired by doing; iconic knowledge by picturing it in one’s mind; and symbolic knowledge by organizing it with abstract symbols such as words. A graduate of Duke and Harvard universities, he was a professor of psychology at Harvard from 1956 to 1972. He founded the Harvard Center for Cognitive Studies in 1960 and headed it until 1972, when he accepted a professorship at Oxford University.

Bryan, William Jennings (1860–1925)

American lawyer, editor, syndicated columnist, congressman, presidential candidate, secretary of state and a prosecuting attorney in the famed **SCOPES MONKEY TRIAL**. A political and social liberal, Bryan was an intellectual and religious conservative who could recite the Bible verbatim and believed in its infallibility. A firm supporter of the growing Christian fundamentalist movement in the early 1920s, he declared Darwin’s theory of evolution an effort to subvert Christianity and American democracy. When Tennessee and other southern states banned the teaching of evolution, he joined the prosecutorial team in charging Dayton High School science teacher John Thomas Scopes with violating the law. In a surprising end to the trial, defense attorney Clarence Darrow called Bryan to the stand and humiliated him by forcing him to reconcile his literal interpretations of scriptural metaphors with scientific facts that even many fundamentalists had, by then, accepted. Bryan died a week later.

Bryn Mawr Summer School for Women Workers in Industry

One of several “colleges” established by socialists, labor union leaders and intellectuals attempting to establish egalitarian educational facilities for American workers during the years between World Wars I and II. Unlike the **BROOKWOOD LABOR COLLEGE**, which was designed to teach union

organization and strike-management techniques, the Workers’ Summer School was modeled after England’s Ruskin College at Oxford and was designed to teach working women such nonvocational subjects as literature, history, hygiene, science and other courses that would make their lives, rather than their work, more pleasant. Bryn Mawr College president Martha Carey Thomas (1857–1935), who was also a prominent suffragist, founded the Workers’ Summer School in 1921. A former Bryn Mawr English professor and dean, Thomas had been president of the college since 1894 and, although she retired in 1922, the summer school continued in operation until 1938.

Buckley Amendment A federal law giving adult students and parents of minors access to, and certain rights to, amend all files related to their school, college and university records. Formally known as the Family Educational Rights and Privacy Act of 1974, the law was designed to prevent inclusion of inaccurate or prejudicial entries in confidential school records that might damage a student’s chances of obtaining a job or gaining admission to a college or graduate school. The law only applies to items inserted since January 1, 1975.

The law not only allows full access to such files, it gives parents and students the right to delete irrelevant, out-of-date materials, such as a ninth-grade behavioral problem for a 17-year-old college applicant whose subsequent behavior proved impeccable. In addition, adult students and parents of minors may insist on the inclusion of any extenuating circumstances or a different interpretation of some element of a student’s record that might otherwise prove prejudicial.

Budd, Thomas (d. 1698) Author of the first proposal for public education in the American colonies. A Quaker convert, Budd was a member of the provincial assembly who

believed that Pennsylvania's natural resources and deep water port in Philadelphia could make it one of the world's most prosperous centers of international trade—if the state provided its people with the proper education. To that end, he published the widely read pamphlet *Good Order Established in Pennsylvania & New-Jersey in America* (1685), in which he called for all children to have seven years of schooling in “all the most useful arts and sciences that they in their youthful capacities may be capable to understand.” The curriculum was to have combined reading and writing in English and Latin with arithmetic, bookkeeping and at least one trade for boys, such as joinery, weaving and shoe making, and one for girls, such as spinning, knitting or sewing.

He called for “all towns and cities” in Pennsylvania to raise taxes to support a system of “public schools,” which would serve children of all denominations, Indians as well as colonists, rich as well as poor. Rich families, he agreed, would probably continue sending their sons to “private” schools. He asked for new taxes to support the public schools and proposed letting students work to raise additional funds. He suggested that girls could produce and sell cloth, while boys grew flax for the girls to spin and weave.

Although widely discussed, Budd's plan was ignored by the Assembly and came to nought.

building blocks A basic pedagogical device for converting play into effective learning by preschool, kindergarten and many elementary school children. Swiss psychologist JEAN PIAGET was among the first to describe the connection between play and intellectual development in early childhood. In effect, play teaches, without children being aware that they are indeed being taught. Building blocks, especially unit blocks made up of small blocks and increasingly larger multiples thereof, are especially

effective in encouraging individual creativity even as they teach the mathematical realities of how fractional parts make up a whole.

Unlike conventional toys, which are designed to entertain, building blocks are important as pedagogical devices because they engage the child's direct rather than indirect participation. In so doing, they teach children gross muscular control and manual dexterity; intellectual, intuitive and aesthetic skills in planning, designing and building a structure; self-control and perseverance in planning and fulfilling what for preschoolers is a long-range project that postpones gratification until the task is complete.

bullying The browbeating or physical victimization of a youngster by one or more other more powerful youngsters. One of the most prevalent types of student misbehavior in almost every elementary, middle and high school, bullying is largely ignored by teachers and administrators, often because they do not know how to prevent it and actually believe it to be a relatively harmless, normal part of the maturation process. The few available studies of bullying dispel this and the many other myths that cloak the problem.

Most children are victimized by bullies at least once, and the majority emerge relatively unscathed. Boys usually suffer extortion and physical abuse, while girls usually suffer social alienation and intimidation, such as teasing about appearance or dress. About 10% of all children attending school are afraid during the entire school day because of bullying. As a result, many avoid lunch, recess and playtime for fear they will be humiliated or physically abused by bullies. Some routinely feign illness to avoid attending school and, as a result, often suffer academically. Long-term victims suffer low self-esteem, fear, anxiety, poor academic performance, lack of interest in school, lack of trust, and difficulties establishing and sustaining friendships. Many need counseling

to overcome the traumas of victimization. Failure to provide such counseling has led to tragic consequences. On April 20, 1999, two Colorado teenagers exploded with rage after years of victimization and, armed with automatic weapons, they burst into their high school in Littleton, Colorado, intent on killing 250 of their schoolmates. They killed 12 students and a teacher and wounded two dozen others before turning their guns on themselves and committing suicide. In March 2001, bullying provoked two students at Santana High School, in Santee, California, to shoot and kill two students and wound 13 others.

Bullies, too, however, suffer long-term consequences of their antisocial behavior. According to a study by Dr. Dan Olweus, a psychologist at the University of Norway, who followed thousands of boys from grade school to adulthood, 65% of boys identified as bullies in the second grade had felony convictions by the time they were 24 years old. Olweus found that bullies tend to become delinquents during their teenage years and develop "serious antisocial and criminal behavior in adulthood." Most remain bullies throughout their lives, enjoy their power and control over others. They often drop out of school, have difficulties holding jobs and fail to sustain close, intimate relationships. They achieve less academically, socially, economically and occupationally than their nonbullying peers. They have more arrests for felonies, convictions for serious crimes, are abusive toward their spouses and are more likely to have highly aggressive children of their own.

Despite the traumatic effects of bullying on both bully and victim, teachers and administrators seem at a loss to handle this widespread problem. Many victims are afraid to report bullying for fear of retaliation by the bullies and alienating their nonbullying peers by reporting a fellow student to school authorities. Teacher and administrator discipline of bullies seldom

solves the problem. Indeed, bullies usually respond to discipline such as isolation or suspension with rage reactions against their victims—regardless of whether their victims were responsible for having provoked the discipline. Nor does a nondisciplinary counseling approach seem to have much of an effect, because the typical bully lacks empathy and has little or no concern how much he or she hurts another youngster.

Like most student social problems, chronic bullying seems immune to solutions at the school level—largely because it is a deep-seated dysfunction with its roots in the home during early childhood. Bullies are usually the children of bullying parents who not only cannot control their own behavior, but are unwilling to control their children's behavior, despite exhortations from teachers and school authorities. Many bully-type fathers are quite proud that their bully sons are "tough." One solution that was tested effectively at 12 elementary schools is a comprehensive "bully-proofing" program in which the entire school faculty, staff and, most importantly, the student body are enlisted to support victims and shun bullies. "No Bullying Allowed" posters adorn the walls, and "no-bullying rules" are taught to every child and distributed to every parent. The approach has yet to be tested at the middle school and high school level, where teachers and administrators seem at a loss to deal with the problem.

Bureau of Indian Affairs (BIA) A controversial agency in the U.S. Department of Interior charged with helping AMERICAN INDIANS and Native Alaskans govern themselves and develop their resources. To that end, the bureau funds more than 200 educational facilities for about 50,000 Indian children who live in areas where public schools are not available. These include more than 100 BIA-run, on-reservation day and boarding schools; about five dozen tribally contracted schools; and more than a

dozen BIA-operated dormitories to permit Indian children to enroll at public schools too far from their homes for them to attend as day students. The BIA also provides college and graduate school scholarships to more than 25,000 Indian students.

Originally a part of the U.S. War Department, the BIA was founded in 1834 as part of the Indian Act, to regulate trade with the new Indian territories that had been formed west of the Mississippi. It assumed a more patriarchal role after it was transferred to the Department of the Interior in 1849. As whites emigrated westward after the Civil War, they came into increasing conflict with Indians over rights to farm, hunt, mine for gold and otherwise exploit natural resources. In 1871, Congress ended the fiction of Indian nationhood and ceased dealing with tribes as if they were foreign nations. Twenty years later, Congress mandated compulsory education for all Indian children, with the Bureau of Indian Affairs in charge. The results were less than noteworthy. Of more than 560,000 Indian children, only about 60% were enrolled in schools in 2002. They scored between 17% and 18% lower than white students in reading and mathematics proficiency and about 11% lower than white students on the verbal and mathematics college admissions tests. Passage of the Indian Self-Determination and Education Assistance Act of 1975 and the Indian Education Act of 1978 transferred some of the BIA's decision-making powers to Indian school boards and encouraged local hiring of teachers and staff. Since then, academic proficiency has improved dramatically, with scores in reading and mathematics proficiency tests now only 11% below those of white students and 6.5% below the national average. Scores on college admissions tests were only 9% below those of white students and only 5% below the national average.

Headquartered in Washington, the BIA operates about 100 offices across the United

States, the majority of them in the West. In addition to education, it is responsible for collecting and managing royalties from oil and gas on Indian lands, cattle and sheep grazing fees and other income not directly distributed to tribes or individuals under 19th-century laws that made the federal government "trustee" over all Indian lands and resources. Under pressure from Indians, who demanded more control over their own lives and resources, and equally fierce pressure from whites to cut government spending, the secretary of interior began an experimental project in 1988 that transferred almost all the bureau's power to the members of 30 tribes. The experiment has led to demands for passage of a new federal law to grant all tribes autonomy and, in effect, deactivate the BIA.

(See ROUGH ROCK DEMONSTRATION SCHOOL.)

Burr, Aaron, Sr. (1716–1757) American minister and educator who cofounded the COLLEGE OF NEW JERSEY, which later became Princeton University. Father of Aaron Burr, Jr., the third vice president of the United States, Burr was born in Connecticut and graduated from Yale College, then a conservative Congregationalist divinity school. Like many young ministers, he founded a secondary school as an integral part of his first parish in New Jersey, where he trained young aspirants to the ministry. A split between Presbyterian conservatives ("Old Light") and reformers ("New Light") in the 1730s and 1740s led to the establishment of the College of New Jersey by the New Light Synod of New York. Founded in 1746, it was first located in the home of Jonathan Dickinson of Elizabethtown, New Jersey. After Dickinson's death in 1747, Burr succeeded to the presidency and moved it to his parsonage in Newark. In 1748, he presided over its first commencement exercises in his Newark church. Burr addressed the six graduates in Latin. Five became Presbyterian ministers and the sixth,

Richard Stockton, a lawyer and signer of the Declaration of Independence.

Burr served for three years as president and pastor without salary. He drew up the first entrance requirements, the first course of study and the first set of rules and regulations. In 1756, he led the move to Nassau Hall in Princeton, where Jonathan Edwards and other trustee/ministers joined him in directing what was then the largest college in the colonies, with space for a classroom, dormitory, chapel, library and refectory.

business school Various, a degree-granting undergraduate or graduate school at a university, or a vocational or trade school offering instruction in basic clerical skills required in most businesses. The latter includes office work, bookkeeping-accounting, secretarial work and office management. Public high schools also offer business skills training as part of their vocational education programs. Public schools also offer students general business education courses, including consumer education and broad studies of the American economic system. At a higher level, more than 1,500 colleges offer bachelor's degree programs in business administration, while 900 offer master's degree programs and about 130 have doctoral programs. More than 100 business schools offered degree and nondegree programs in the booming new field of EXECUTIVE EDUCATION. Depending on the program, courses may range from basic accounting to international management. Among the basic topics covered in executive education by most business schools are marketing, finance, risk management, e-commerce and Internet business strategies, personnel management, and internal operations and administration. Most business schools require applicants to take the GRADUATE MANAGEMENT ADMISSIONS TEST (GMAT).

Annual tuition and mandatory fees for a two-year program leading to a master of busi-

ness administration (MBA) range from about \$5,000 (or less) to \$10,000 for state residents at state universities and from \$30,000 to \$40,000 a year at private universities and for out-of-state residents at public universities. With living expenses, medical insurance, books, materials, computers and transportation, total costs of attending business school range between \$25,000 and \$75,000 a year—and are increasing by about 10% annually. Distance learning programs cost about \$10,000 but allow students to remain at home and continue working full or part time. For full-time students, lost job income and ancillary costs during two years at graduate school can raise total costs to about \$100,000 a year at Harvard University's business school, according to estimates by *Business Week* magazine. Graduates, however, can count on starting salaries in the \$60,000-a-year range, or about 63% higher than they would have commanded without MBAs, along with all-but-certain 10% annual salary increases for five years thereafter. MBA graduates with previous business experience often command starting salaries of \$100,000 or more.

Although college-level business studies date back to 1881, with the founding of the Wharton School of Finance and Commerce at the University of Pennsylvania in Philadelphia, graduate business education did not become popular until after World War II. The number of graduate programs doubled from 1970 to 1990, when a record number of more than 300,000 business school applicants took the GMATs. The following year, however, business schools began experiencing a sharp—and surprising—decline in the number of applicants, with the total falling below 140,000 a year by 1995 and dipping below 75,000 by 2000. There were several reasons for the decline. One was the new requirement at many business schools that applicants have at least two years of business experience. Designed to reduce alarmingly high drop-out rates, the require-

ment barred the door to students who had only just completed their studies for bachelor's degrees and were not certain they would pursue careers in business. Another cause of the decline in enrollments, however, was the growth of Internet-related commerce and technology firms, which were snapping up the most talented young men and women before they entered graduate school—some before they even entered or finished college—at salaries (and often stock options) that made the starting pay of business school graduates seem paltry.

To compensate for the drop in enrollments of younger students, dozens of business schools expanded their offerings—and appeal—to include “executive education,” with one-to-two-year MBA and nondegree programs designed for midcareer executives and, in many cases, custom-designed for executives of specific companies that cover all costs. Some schools charge \$100,000 or more for such two-year customized programs. Typical programs require students to meet on alternating Fridays and Saturdays and for two weeks during the summer, but some programs are available over the Internet. Many business schools have also expanded their offerings to corporations to include one- and two-week intensive courses and seminars in specific subject areas (doing business in China, for example). Such courses are usually held on company premises at a fixed cost contracted with the company.

busing The free transportation of school children to and from their homes and their school and school activities. Included as part of the annual school budget, busing became a necessity when passage of state compulsory education laws required students in even the most remote rural areas to attend centrally located schools. Busing expanded during World War II as gasoline rationing made it impossible for most children in rural areas to get to school

by car. The school consolidation movement of the 1950s and the mass migration to the suburbs made busing the standard method of school transportation for the vast majority of students in the United States.

Busing became a center of controversy in the 1970s, following the U.S. Supreme Court's ruling in *SWANN V. CHARLOTTE-MECKLENBURG BOARD OF EDUCATION*. In its decision, the Court ordered the board to bus students out of their districts, if necessary, to carry out Court-ordered racial desegregation of public schools. Although integration-related busing affected less than 10% of the school population, it met considerable opposition from both black and white parents. Black parents protested busing young children as much as an hour or more each way to white suburban schools, partly because the distances to such schools made it difficult both for their children to participate in after-school activities and for poor parents to involve themselves in school affairs. Some white parents, meanwhile, protested their children being transferred from excellent suburban schools to mediocre or substandard inner-city schools. In reaction, many transferred their children to all-white private schools. The results were all-but-total de facto segregation of black students at inner-city schools and a net deterioration in academic quality in all-black neighborhoods, and, one by one, the school districts under court edict to bus children to out-of-district schools applied for—and obtained—relief from busing orders. By the beginning of the 1999 school year, Charlotte, Boston and other cities had abandoned their busing plans, and busing as a vehicle for desegregation all but came to a halt across the United States.

Butler, Nicholas Murray (1862–1947) Educator, Nobel Prize laureate and an architect of the modern American university. Born in New Jersey, he received his undergraduate and



Columbia University president and Nobel laureate Nicholas Murray Butler (Library of Congress)

graduate degrees at Columbia College and, after studying in Europe at universities in Berlin and Paris, he returned to teach philosophy at Columbia, where he remained for the next 60 years, more than 40 of them as president. Butler built Columbia into a university of 7,500 students and helped establish schools of journalism, business, social work, library science, dentistry and public health; he also added the School of General Studies for adult education and a summer session.

Appointed professor of philosophy and education in 1890, he plunged into the study of theories of learning, education, teaching and curricular organization. He made extensive reports on state and local teaching methods and founded the journal *Educational Review*. He organized and became the first president of Colum-

bia's New York College for the Training of Teachers, which, in 1898, became Teachers College of Columbia University. In 1902, Columbia University named him its 12th president.

Butler's ambitions for Columbia meshed perfectly with those of his two immediate predecessors. FREDERICK A. P. BARNARD had added the first graduate schools and expanded Columbia enrollment from 100 to 2,000 students. The wealthy former merchant Seth Low personally paid for the addition of Columbia's huge library and presided over the addition of the medical school and Butler's new Teachers College. Building especially on the foundation laid by Barnard and Low, Butler transformed Columbia into the international center for learning it remains today. By 2000, Columbia had more than 2,000 faculty and offered more than 100 baccalaureate, 160 master's and 80 doctoral programs to about 19,000 students from around the world.

Butler's influence reached far beyond the Columbia campus. He helped his home state of New Jersey organize its public library system and vocational schools and reorganized the state's teachers colleges. On the national scene, he helped organize the College Entrance Examination Board and the CARNEGIE FOUNDATION FOR THE ADVANCEMENT OF TEACHING. Butler was also deeply involved in American politics and campaigned actively for women's suffrage and against prohibition. An advisor to Presidents Theodore Roosevelt and William Howard Taft, he was a last-minute replacement as Taft's vice-presidential candidate in 1912 and an unsuccessful candidate for the 1920 Republican nomination for president. A consummate internationalist who devoted much of his off-campus life to the cause of world peace, Butler led five international conferences on international arbitration between 1907 and 1912 and helped organize the Carnegie Endowment for International Peace, serving as its president from 1925 to 1945. He was instrumental in the drafting of the Kellogg-Briand

Pact of 1928, which 62 nations eventually signed, agreeing to outlaw war as a means of settling international differences. (While in Rome to obtain the support of Pius XI for the pact, he helped the pope reorganize and modernize the Vatican Library.) In 1931, he shared the Nobel Peace Prize with American social reformer JANE ADDAMS.

Butler published more than 3,000 books, articles, essays, reports and speeches, including 17 volumes of correspondence with presidents of virtually every nation. He received honorary degrees from more than 40 colleges and universities around the world and served as president or trustee of more than two dozen cultural, educational and political organizations.

C

Cabell, Joseph Carrington (1778–1856)

Virginia legislator who sponsored the legislation for THOMAS JEFFERSON to create the UNIVERSITY OF VIRGINIA in 1818. Often called Jefferson's "right hand man" at the university, Cabell helped obtain the original legislative charter of the university and the financial appropriations for its first three decades of operation. A strong advocate of universal education, he was responsible for legislation that extended primary and secondary school education to girls as well as boys.

cadet teacher program A high school tutoring program in which gifted children provide slower students with special help. Although formal peer tutoring dates back to the late 18th century, a corollary object of modern cadet teacher programs is to improve teaching quality by allowing gifted students to experience the rewards of teaching and encouraging them to consider it as a possible career. The program was a response to the deteriorating academic performance of men and women entering teaching in the 1960s, when higher-paying professions lured the highest-ranked college graduates. Meanwhile, those who became public school teachers tended to have graduated from the lower halves of their college classes. Average SAT scores for high school seniors planning to become education majors are about 4% below the national average for all college-bound students on the verbal tests and

6.3% below the national average on the mathematics test.

Peer teaching was first developed by British educator Joseph Lancaster as a way of teaching large numbers of children while keeping teacher salary and other school costs at a minimum (see LANCASTERIAN SYSTEM). In 1798, he educated 1,000 boys at a Society of Friends (Quaker) free school by first tutoring the oldest most responsible boys and appointing the most qualified as monitors to supervise and instruct younger students. In 1818, he emigrated to the United States and founded Lancasterian schools in Philadelphia, Baltimore, Boston and Washington, D.C.

Today's peer tutoring programs have gained widespread acceptance in selective private secondary schools, but teacher-union opposition has hindered their growth in many public schools.

cafeteria, school An increasingly complex self-service restaurant where students and faculty purchase food and beverages at a central counter and carry their own trays to tables to eat. Often less supervised than classrooms, school cafeterias are sometimes the site of student conflicts and violence. In addition to behavior problems, cafeteria management is further complicated by the unpredictability of student (especially adolescent) eating habits. For whatever reasons, a student may skip lunch one day, bring lunch from home on another,

or eat out at a nearby foodstand or restaurant on another. Spoilage of purchased foods is a major problem for many schools and a reason few commercial caterers are willing to assume cafeteria management at the primary or secondary school levels.

Complicating cafeteria management still further has been the federal NATIONAL SCHOOL LUNCH PROGRAM, which makes free or inexpensive lunches available to needy school children. Based on studies showing that well-nourished children perform better in school, a National School Lunch Act was enacted in 1946 to ensure lunch for every American child in school. Although all public schools must provide students with lunch, they do not necessarily participate in the National School Lunch Program. Schools that do participate are required to provide lunches that meet specific federal government nutritional requirements, including a half-pint of milk, two ounces of lean meat, poultry, fish or alternative food, vegetables and fruit, bread, and one teaspoon of butter or margarine. Only 1% of school lunches meet dietary guidelines for total fat and hardly any meet guidelines for saturated fat. The federal government's dietary guidelines call for no more than 30% fat in school lunches, while total fat content is actually 38%. The dietary guidelines restrict saturated fat to 10%, while actual content is 15%. The difficulty in controlling such elements of the program is the limited number of suppliers in any given community. Schools have little choice but to use their limited budgets to purchase whatever is available. To purchase better quality food elsewhere would simply add transportation costs.

Some costs of the program are defrayed by state aid and fees charged to parents who can afford them, but the vast majority of the costs are financed by about \$9 billion a year in federal funds. In 1966, the School Lunch Program was expanded with passage of the Child Nutrition Act, or "school breakfast program," to pro-

vide breakfasts for economically deprived children who might not otherwise obtain enough food at home before they left for school. The 1966 amendment has forced thousands of schools to open cafeterias early in the day and maintain additional staffing.

Because of increased costs associated with the program, schools often purchase government surplus foods, which usually consist of high-fat, high-calorie cheeses and comparable dairy products that contribute to the growing problem of obesity among American children. Complicated by an equally contentious problem of television-related inactivity, obesity among school-aged children reached epidemic proportions in the later 1990s and early 2000s, with estimates of the percentage of overweight children varying from 35% to 50%, depending on definition. Responding to growing national concerns, former president Bill Clinton led a campaign to obtain agreements with producers, bottlers and distributors of soft drinks to curb or halt distribution of high-calorie soft drinks and beverages. By 2006, the soft drink industry had agreed voluntarily to try to limit distributions in public elementary and middle schools to bottled water, fruit juices, and low-fat milk and to limit the products distributed in high schools to low-calorie "diet" sodas, teas and soft drinks. The agreement, however, does not prevent individual school boards or schools from stocking their cafeterias and beverage machines with whatever beverages they choose.

calculator An electronic device which, depending on its complexity, automatically performs a variety of mathematical operations. Calculators remain a center of some controversy among elementary school teachers and authorities on early education. Although there is universal agreement that the ability to use a calculator is an essential skill, some educators fear that premature use can make some chil-

dren so dependent on the calculator that they never learn enough mathematical skills to function without one or to check its accuracy. Some educators believe calculators should not be introduced in school until the third or fourth grade, after children have mastered all basic mathematical operations, including fractions and decimals. They can then use the calculator to perform tedious, repetitive operations and concentrate on applying mathematical functions for solving complex problems.

Caldecott Medal An annual award presented by the AMERICAN LIBRARY ASSOCIATION to the finest illustrated book for children, as selected by a committee of librarians. Introduced in 1938, the medal was named for British picture book artist Randolph Caldecott (1846–86), who illustrated Washington Irving's *Old Christmas* (1876) and *Bracebridge Hall* (1877) and a variety of other children's books, including *The House That Jack Built* (1878) and *Aesop's Fables* (1883).

Calderone, Mary Steichen (1904–1998) Quaker physician, pioneer crusader in sex education and birth control and cofounder of SIECUS, the Sex Information and Education Council of the United States. Born in New York, Calderone was the daughter of photographer Edward Steichen and the niece of poet Carl Sandburg. She was educated at Vassar College, the University of Rochester Medical School and the Columbia University of Public Health. In 1941, she married Dr. Frank Calderone, deputy commissioner of health of New York City and later chief administrative officer of the World Health Organization.

Calderone was a physician to the public schools of Great Neck, N.Y., until 1953, when she became medical director of Planned Parenthood Federation of America, a post she held until 1964. In January 1965, she helped found SIECUS, became its executive director and

began years of campaigning to introduce sex education as a standard element of the curriculum in every grade from kindergarten through high school. Calderone defined sex education as including appropriate discussions of sexual and mating behavior, psychological factors, the institution of marriage, birth control, abortion and the pleasurable and relational aspects of sex. An ubiquitous presence on the high school and college lecture circuits for many years, Calderone denounced the cultural denial in the United States of the "gift of sex . . . [as] an attribute of life. Our youth throws this gift away recklessly, when we have at hand ways and means of making life more meaningful in the realm of sex and its part in our lives." Her efforts to bring sex education into the classroom spurred hate campaigns against her and her organization.

California The most populous state in the United States, with 13% of the nation's school children. First explored by Europeans in 1542, it was occupied by U.S. forces during the Mexican War in 1846, and Mexico ceded the province to the U.S. in 1848, the same year gold was discovered at Sutter's Mill.

California became the 31st state in 1850, a year after the gold rush of 1848–49 had begun and the territorial government had adopted the state's first constitution. Although that document provided for establishment of a public school system, free public schools were not established in California until 1866, when the legislature passed the Revised School Law. Despite the fact that California had more than a century of educational tradition in the Spanish missions that dotted the state, the largely non-Catholic American settlers of the 19th century shunned most of them. The Revised School Law of 1866 only provided funds for the most basic elementary school education, and in districts with fewer than 100 students schools only remained open three months a

year. In 1903, the state voted to fund public high schools and, in 1917, it extended its funding to junior colleges.

California has nearly 6.9 million students, of whom 65% are minority students, 44.5% Hispanic. About 15.5% of school-aged children live in poverty. The state's more than 8,900 public elementary and secondary schools have long ranked among the five worst school systems in the nation in academic quality, despite the highest average teacher salaries in the United States. The schools have the second-highest average student-teacher ratio in the nation, 20.5 students per teacher, and the eighth highest drop-out rate, 17.5%. Student academic proficiency languished at or near the bottom 10% for decades, driven lower with each passing year by mandatory bilingual education for immigrant children, whose educational progress all but grinds to a halt with the need to repeat everything in both English and their native tongues. Enraged California voters, led by impoverished Hispanic mothers who recognized the economic necessity of their children's attaining English fluency, banned bilingual education from public schools in a 1999 referendum. The results have yet to produce any substantial results in student academic performance. Only 21% of students at all grade levels are proficient in reading, and only 22% to 28% are proficient in mathematics.

Public dissatisfaction with schools first became evident in 1993, when taxpayers demanded a referendum on whether parents should have the right to choose their children's schools and to receive VOUCHERS annually from their local school districts redeemable toward tuition at private schools. Although Californians defeated the proposal, it encouraged the formation of an active reform movement among the state's educators.

California's system of public higher education also dates back to the 1849 territorial constitutional convention, which expressed "hope"

that a university might be established in the state. In 1851, Methodist ministers established the state's first college in Santa Clara. The College of the Pacific (now the University of the Pacific, in Stockton) gave the West Coast its first medical school in 1858. The roots of public higher education go back to 1853, when the Contra Costa Academy opened in Oakland. Two years later, the state legislature issued a charter to the College of California, which absorbed the academy. In 1868, the state legislature chartered the UNIVERSITY OF CALIFORNIA, a nonsectarian institution created under provisions of the federal Land Grant (Morrill) Act. It opened the following year with 40 students and 10 faculty and, five years later, moved to its present site in Berkeley. Although Berkeley remains its flagship campus, the University of California now has nine campuses across the state, with more than 7,000 faculty serving more than 160,000 students. Moreover, they are but a small part of the state's higher education system, which, with nearly 2.4 million students, is the world's largest. Developed as a result of master plans prepared in 1948 and 1955, the California system of state-sponsored higher education was the first in the United States designed to provide universal higher education, and it prompted similar attempts in other states.

The system has three tiers: The nine University of California campuses, with more than 160,000 students, are at the top tier; 22 CALIFORNIA STATE UNIVERSITY campuses, with 350,000 students, are in the second tier; and more than 100 California Community College campuses, with nearly 2.5 million students, are in the third tier. Each tier originally had distinctly different missions, but there has been some overlapping in certain areas. In principle, the lowest tier of two-year colleges accepts all graduates of accredited California high schools, and the focus of their curricula is on technical and preprofessional subjects leading to associ-

ate in arts degrees. The four-year California State colleges accept members of the top one-third of graduating high school students and offer liberal arts and professional programs (accounting, etc.) leading to bachelor's and master's degrees. In theory, the nine University of California campuses accept students from the top 12.5% of graduating high school seniors and offer traditional liberal arts programs and preprofessional, graduate and professional curricula leading to bachelor's, master's and doctoral degrees.

Until 1996, between 40% and 60% of all students admitted into the University of California gained admittance solely on academic merit, with the remaining freshmen admitted on the basis of a variety of factors, such as athletic abilities, extracurricular activities, socioeconomic status, gender and, because of affirmative-action programs, race. In 1996, however, the people of California voted overwhelmingly to force the state to abandon affirmative action in hiring and in education, and the University began admitting 50% to 75% of all freshmen on academic merit alone. In 2000, the University began experimenting with an admissions policy that offered a compromise between affirmative-action and merit-based admissions by granting automatic admission to students finishing in the top 4% of their high school classes, regardless of the academic quality of their schools or their scores on standardized college admissions.

The year 2000 also saw a sharp turnaround in California's higher education fiscal policy. During the early 1990s, soaring government deficits forced sharp budget cutbacks at both the University of California and California State University systems. The University of California's budget shrank to about \$1.75 billion from more than \$2 billion a year, while California State University's budget shrank from \$1.75 billion to less than \$1.5 billion. Cal State cut its full-time faculty from more than 12,000

to about 10,000 and the number of classes from 50,000 to about 35,000, thus eliminating many courses and majors and cutting the number of sections in each course. The scheduling of required courses at the same time forced many students to extend the time needed to obtain a degree from four to five or six years. Other students were forced to enroll in out-of-state colleges to find the courses and majors they wanted. By the end of the century, California's voters reversed course, and from 2000 to 2006 their legislators were voting 5% to 10% increases in annual budgets for the state's three public college systems, raising budgets to \$2.8 billion for the University of California, \$2.6 billion for California State University, and \$5.5 billion for the state's community colleges. In addition to its 34 public four-year institutions of higher education, California has 194 private four-year colleges and universities, of which 48 are for-profit. The state has six private two-year colleges (47 of them for-profit) to supplement the state's 110 public two-year colleges. Total enrollment at four-year colleges is more than 2.2 million—more than 55% of them women and more than 51% minorities. The graduation rate is above the national average at 58.8%—55% for men and 62% for women.

California Achievement Test (CAT) One of the most widely used basic educational skills tests for measuring reading, mathematics and language skills of children from the middle of first grade through high school. Separate tests are available for five different ranges of grade-levels: 1.5–2, 2–4, 4–6, 6–9, and 9–12. The total score in each of three areas is broken down into subsections: vocabulary and comprehension, for reading; computation, concepts and problem solving, for mathematics; and mechanics, usage and structure, and spelling, in the language section. For first and second graders, the language test includes a special component—auding, or the ability to hear,

recognize and interpret spoken language. It is published by California Test Bureau/McGraw-Hill, Rosemont, Illinois.

California Educational Reform Act of 1983

An attempt to improve public school education by offering budgetary cash incentives to schools whose student achievement scores improved. The law also created the first official career ladder plan for teachers, as well as the first MENTOR teacher program in the United States. Subsequently adopted in varying forms by many other states, the California career ladder plan was designed to provide specific career goals and appropriate rewards in the form of higher salaries and greater authority for successful teachers. Most ladders begin with probationary periods apprenticeships at the lowest rungs and culminate with such designations as "MASTER TEACHER" at the highest.

The California Educational Reform Act provided an elevated rung for mentor teachers, selected by their peers because of their knowledge and teaching skills, to work with other, less experienced teachers. A highly paid position, mentor teaching requires spending at least 60% of one's time instructing other teachers in a specific school or throughout the district. The Reform Act failed, however, to produce any substantial improvement in student academic performance—possibly because of the surge in the number of impoverished immigrant children with little prior education.

California Preschool Social Competency Scale A standard PERFORMANCE TEST to measure the intellectual abilities and school readiness of preschool and kindergarten of children too young to read.

California State University A system of 18 four-year colleges and four two-year colleges established in 1961 as the middle tier of the three-tier California public higher education

system designed to provide universal higher education. The largest public college system in the world, "Cal State" has about 350,000 full-time and part-time students of all ages and more than 19,500 full-time and part-time faculty. It offers 965 baccalaureate and 600 master's degree programs, along with a handful of doctoral programs that were not part of the system's original mandate. When created, the system was to have served students from the middle one-third of the graduating high school population seeking bachelor's and master's degrees in liberal arts and professional studies. Depending on the campus, Cal State now accepts between 50% and 85% of all applicants, including many from out of state, and it has extensive adult education programs.

California Test of Mental Maturity (CTMM)

A wide-ranging group of intelligence tests that measure academic skills essential for school, such as learning, problem-solving and responding to new situations. Designed as a contrast to I.Q. tests that measure genetically predetermined intelligence, CTMM measures five academic skills: logical reasoning, spatial relationships, numerical reasoning, verbal concepts and memory. CTMM tests yield a score for each skill, an overall score for nonlanguage skills, a second overall score for language skills and a total score for the entire test. Separate tests are given for each of six school-grade ranges, from kindergarten through senior year of college. A short version of the test—the California Short-Form Test of Mental Maturity—is also available.

Calvinism An early Protestant religion out of which arose Puritanism, Congregationalism, Presbyterianism and the Dutch, French and German Reformed churches. The basis of almost all education in the early American colonies, Calvinism was one of four major religious groups that emerged from the Protestant Reformation of the 16th century, along with

Lutheranism, Anabaptism and Anglicanism. Calvinism was the doctrine of the French priest Jean Chauvin (1509–64), whose name was anglicized to John Calvin. Like Martin Luther, Calvin rejected papal supremacy and infallibility, but, unlike Luther, he believed the state should remain subject to the church. He believed strongly in the doctrines of original sin and predestination—that is, that man is born evil and predestined by God for either salvation or eternal damnation. He believed that thrift, industry and hard work were essential moral virtues and that monetary success was a sign of God’s blessing.

Calvinism became an integral part of education after Calvin fled France to Geneva, Switzerland, where he helped reform both the secular and religious life of the city. He helped write the city’s new constitution, which not only made the church supreme, but established a municipal school system for all children, with the Geneva Academy as its central institution, for the very brightest students who would later become ministers.

Calvin’s followers carried his principles and precepts with them to the American colonies during the century that followed. Wherever they settled, Puritans and other Calvinist sects were quick to establish “common” schools, along with academies for the very brightest students, who almost invariably became ministers. Calvinism formed the core of the curriculum in almost all such schools—even after the United States had declared its independence from England and her church at the end of the 18th century. Indeed, it was not until 1833 that the last state—Massachusetts—threw off the last vestiges of Calvinist influence in American education by disestablishing the church as its official religion.

Cambridge Plan An 1893 elementary school TRACKING system adopted in Cambridge, Massachusetts, to permit the brightest students

to complete elementary school education two years sooner than the rest of their class.

Cambridge Platform An agreement signed in 1648 by the synods of four New England colonies (Massachusetts, Plymouth, Rhode Island and Connecticut) to try to unify the various Protestant reform movements into a single Puritan/Anglican church. At the time, the Protestant church was responsible for all education, in keeping with St. Paul’s words to the Corinthians: “And God had appointed in the church first apostles, second prophets, third teachers. . . .” Although the Cambridge Platform had little lasting effect in unifying the various Protestant splinter groups in the colonies, it did have long-lasting consequences for colonial education by unifying the offices of pastor and teacher and ensuring church control over education during the remainder of the colonial era.

Camer v. Eikenberry A 1983 case in which a public school pupil claimed school authorities had denied him due process and equal protection under the Fourteenth Amendment of the Constitution by excluding him from an honors program, denying him adequate instruction and otherwise hindering his progress in school. A trial court dismissed the suit, saying it lacked jurisdiction over the subject matter taught in public school. A federal appeals court upheld the dismissal and the Supreme Court refused to review the decision. The importance of the case lay only in the right of public schools to establish minimum academic standards for entry into special programs such as honors programs. In so doing, schools essentially removed certain programs from the “public” sector, in that they were reserved for a specific, academic elite and thus no longer open to all. The *Camer* case challenged that right and lost.

Camp Fire Girls One of several CHILDREN’S ORGANIZATIONS started in the early 20th century

by members of the progressive education movement to supplement embryonic efforts by public school systems to work with adolescents. Now known simply as Campfire, the organization was founded in 1910 by Dr. LUTHER GULICK and his wife as a recreational, educational and service organization for girls. Plagued by ill-health throughout his life, Gulick became a strong advocate of physical education as a source of good health and pioneered its introduction into the school curriculum as director of physical education for New York City public schools.

In 1910, fewer than 10% of American adolescents attended high school. Most worked in factories and mines or in the fields, and progressive educators such as Gulick were concerned that adolescents were growing up with few moral values. They responded by forming a variety of clubs that would channel youthful energies into worthwhile activities. Now coeducational, Camp Fire operates three major programs for more than 750,000 members. Its Club Programs are small groups similar to BOY SCOUT and GIRL SCOUT troops, under the supervision of adult volunteers. Outdoor Programs offer day camping, overnight group camping and field trips. Response Programs offer a variety of social services, including day-care centers, delinquency prevention work and tutorial-reading programs.

campus jobs Part-time work opportunities offered by colleges and universities as part of their overall financial aid packages to students unable to afford the full costs of tuition, room, board and other expenses of higher education. Of more than 17 million college undergraduates attending college, about 5% have part-time jobs on campus, paying an average of about \$1,400 per school year. About 80% of on-campus jobs are part of the federally funded COLLEGE WORK-STUDY PROGRAM (CWSP) created by the Economic Opportunity Act of 1964 to fight poverty. Under CWSP, the federal government

pays 80% of student wages and the college pays 20%. CWSP also permits students to work for nonprofit organizations off campus, with the federal government still paying 80% of the student's wages and the nonprofit organization paying the rest.

Although campus jobs once entailed active, daily indoor or outdoor labor—waiting tables, buildings and grounds maintenance, etc.—most campus jobs are now limited to “passive” activities that permit students to read or do homework while peripherally attending to their work duties. Usually involving only two to three hours, three or four days a week, campus jobs now include serving as receptionists or answering switchboards. About 12% of the nearly 2 million university graduate students earn on-campus wages either as research or TEACHING ASSISTANTS.

campus visits Organized tours of and overnight stays at college and university campuses by prospective applicants. Almost all college and universities offer guided tours to the public. Usually led by student guides, such tours offer prospective applicants an opportunity to learn about each college without making personal commitments or going through the time and expense of filing formal applications. Tours also give applicants an opportunity to ask informal questions about social concerns such as crime and drugs on campus, campus security, food quality, student morale, percentage of courses taught by full-time faculty as opposed to graduate-student teaching assistants, etc.

Another form of campus visit is the overnight stay, which is most appropriate for applicants who have been accepted by several colleges and are undecided about which they prefer. Usually arranged by admissions offices, overnight stays allow applicants to stay in a freshman dorm with volunteer student hosts and, for 24 hours, sample all aspects of campus

life, including classes, meals and extracurricular activities.

Cantabs A nickname for students and graduates of HARVARD COLLEGE, the first college founded in the American colonies. Derived from Cantabrigia, the Latin name of Cambridge, England, Cantabs is short for Cantabrigians, or the resident of Cambridge and students at Cambridge University. First used in 1540, the name was accorded to students at Harvard after its founding in Cambridge, Massachusetts, in 1636, when Latin was still the language of instruction.

capacity reading level The highest percentage of material that a student understands from material that is read aloud. To remain at the appropriate grade level in most basal reading programs (see BASAL READERS), a student should have a capacity reading level of at least 75%, or an understanding of three-quarters of basal reading materials read aloud.

(See also READING LEVELS.)

capitation grant In the case of educational institutions, sums of money given by a government agency or private foundation according to the number of individual students enrolled in the particular recipient institution or district. Thus, a capitation grant of \$100,000 awarded to a school district with three schools and a total enrollment of 1,000 students would not be divided equally among the three schools but on the basis of the number of students in each school. If the schools had respective enrollments of 200, 300 and 500 students, for example, the \$100,000 grant would be divided on a per capita basis of \$100 per student, or \$20,000, \$30,000 and \$50,000, respectively, for the three schools. Many states now have career-incentive programs that offer college students attractive grants to pursue specific careers in areas faced with acute labor

shortages. The grants usually require recipients to remain in the state for a minimum number of years after graduation, while pursuing the career for which they trained at college. Long used by poor and rural states to recruit teachers, nurses and doctors, career-incentive programs have spread across the nation to entice residents to pursue careers in science and technology. The goal of each state is to lure new industrial investments by building a technologically skilled workforce. Pennsylvania offers SciTech Scholarships worth \$3,000 a year to students enrolled full time in one of 64 baccalaureate programs in science and technology. Recipients must begin working in the state in an appropriate field within one year of completing their studies and must work one year for every year of scholarship support. Otherwise, each grant is considered a loan, to be repaid at a hefty 10% interest. Illinois, Maryland, Missouri and West Virginia have similar career-incentive programs in science and technology. Texas offers grants worth \$5,000 a year to prospective teachers who remain in the state and teach in Texas public schools for five years. Kansas has career incentive scholarships for prospective nurses, while Mississippi has programs for both teachers and health care professionals.

card catalog Once traditional library files containing alphabetical listings on uniformly sized cards of every book in a library, by title, author, subject or other pertinent reference. Each card also contains the class or call number, indicating the section and shelf where the book can be found. Often, a card will also include a short description of the book. Cards are usually 3" × 5" index cards, stored vertically on their broad edges and fastened by horizontal rods running along the length of the bottom of each drawer. Drawers are normally stacked in vertical rows by alphabetical contents. Librarians, however, have now made

card catalogs virtually obsolete by transferring card data to computer databases.

(See also LIBRARY.)

Cardinal Principles of Secondary Education A statement of broad policy goals for American public high schools, issued in 1918 by the Commission on the Reorganization of Secondary Education. As waves of poor immigrants from Europe thronged to the United States in the 1890s, American urban public high schools were unable to cope with ever increasing numbers of unruly, illiterate, unskilled adolescents. In addition to teaching the rudiments of English, high school English teachers were forced to teach youngsters basic hygiene, nutrition, the obligations of citizenship and moral and ethical behavior.

Until then, the official goals of American secondary schools had been to teach students, regardless of national origins, a core of basic academic subjects, including English, mathematics, science, history and foreign languages. In the 19th century, when fewer than 10% of all children attended high school in the United States, that task was relatively simple. As late as 1910, about 90% of American children older than 12 worked in mines and factories and on farms.

Overwhelmed by the sudden influx of adolescents, high school teachers asked for new teaching guidelines from their national organization, the NATIONAL EDUCATION ASSOCIATION. In 1913, the NEA appointed a blue-ribbon panel to recommend reforms and, five years later, it issued a policy statement that listed seven new teaching goals for American high schools: health, command of fundamental processes, worthy home membership, citizenship, ethical character, vocation and worthy use of leisure. The report signaled the end of the academic core curriculum as the sole basis for universal public school education in the United States. The commission's report led to the introduc-

tion of vocational training in U.S. public schools as a viable educational alternative for adolescents. It also led to the introduction of guidance departments to help adolescents make intelligent choices between academic and vocational education.

The commission report also ended the traditional eight-year elementary school. Elementary education was thereafter cut to six years and JUNIOR HIGH SCHOOLS were built for seventh, eighth and, in some communities, ninth graders. The junior high school not only eased severe overcrowding of elementary schools, it also allowed teachers to deal more effectively with the special problems of early adolescents.

career colleges/schools Any of a wide variety of FOR-PROFIT COLLEGES OF PROPRIETARY SCHOOLS, offering courses and practical training in career skills for the workplace—office management, cooking or drafting, to cite only a few examples. Sometimes called “commercial school” but better known as ENTREPRENEURIAL, or proprietary schools, career schools tend to offer a narrow set of courses to train students for a specific career (office management, security services, paralegal work and so on) or single-skill jobs such as keyboarding, bartending and so forth. Depending on the institution, career schools may offer high school equivalency diplomas under the GENERAL EDUCATIONAL DEVELOPMENT program or certificates in a trade and even two-year associate degrees to students who successfully complete their course work. Students tend to be a mix of working adults, with or without high school diplomas or other academic credentials, who are seeking a new career direction. Teachers tend to have practical experience rather than academic credentials. Career schools often turn to the disadvantaged for clients, luring high school dropouts with promises of steady earnings after only a year's training—at costs fixed according to federal and state tuition loans and grants. When permissible federal and

state loans and grants totaled \$9,000 in 2006, career schools universally adjusted their tuition and fees to \$9,000. Government funds are paid directly to the schools once a student enrolls and are retained by the schools whether or not the student completes the course. Students, however, remain responsible for repaying all loans, and the federal government has accused many schools of using false advertising and high-pressure sales techniques to lure unqualified applicants to enroll, knowing they have little promise of completing the work. In addition, many schools routinely accept students who have not graduated from high school, although they make such applicants sign statements that they had graduated from high schools in other countries and were unable to obtain their records.

The alarmingly high drop-out rates that resulted—often 90% or more at some schools—forced the U.S. DEPARTMENT OF EDUCATION to curtail the flow of federal aid to schools that fail to administer entrance examinations and reject applicants who cannot demonstrate an “ability to benefit” from higher education and thus qualify for financial aid. Although drop-out rates have declined to about 80%, career schools have continued to be the targets of state and federal government investigations into such practices as falsifying federal student loan applications, recruiting students with no academic qualifications and routinely providing applicants with test answers to ensure their academic standing and continued eligibility for federal student loans and subsidies.

(See also COMMERCIAL SCHOOLS.)

career counseling and placement A complex educative program to teach students about the “WORLD OF WORK” and help match them with appropriate career opportunities. At the secondary school level, career counseling begins with a multistep instructional program over four years. Included are a close examina-

tion of career descriptions in such guides as the U.S. Labor Department’s 500-page *Occupational Outlook Handbook*. Many schools also offer a one-semester, prevocational course often called “The World of Work.” Field trips to various factories, businesses and professional institutions and enrollment in elective vocational courses complete the instructional elements of career counseling. Students often take a battery of tests to help determine their occupational aptitudes and interests. Individual counseling then helps direct students to the proper advanced training and education for the careers they seek. Effective high school career counseling offices also maintain close ties to local industry and help graduating seniors who do not intend to go to college to get job interviews.

At the college and university level, most major institutions have extensive placement bureaus that offer formal instruction in writing resumes and cover letters, applying for jobs, taking job interviews and placing advertisements. The most effective college placement offices also have extensive dossiers on thousands of American companies—especially those with a particular affinity for graduates of that particular college. Placement offices also arrange for corporate recruiters to come to the campus and interview college seniors, and they help seniors obtain off-campus interviews with prospective employers.

career education A vaguely defined term encompassing any and all education that prepares an individual for a career. In broadest terms, it includes everything about the world of employment that a person studies, from kindergarten through high school, college and graduate or professional school. More specifically, educators use the term *career education* to refer to four broad areas of the primary, secondary and higher education curricula: career awareness, career exploration, career understanding and career preparation and specialization.

Although career education varies from state to state, career awareness is injected into the primary school curriculum by taking children from kindergarten through sixth grade on field trips to various businesses and institutions and by inviting representatives from various professions to visit classrooms and describe their work. Career exploration for seventh, eighth, ninth and tenth graders continues field trip experiences, at least two formal, one-semester courses often called "The WORLD OF WORK." The first of the two courses explores a dozen or more "job clusters," such as agriculture, manufacturing or health care, and explains the functions of and required training for individual jobs within each cluster. The second "World of Work" course teaches older students how to look for jobs, write resumes, fill out job applications, have job interviews and handle other details of looking for, finding and keeping a job. It also teaches basic job skills such as promptness, proper behavior and on-the-job relationships with coworkers, employers and clients.

Career understanding is also fostered by the social studies and history curriculum, which should provide students with a knowledge of the working of the U.S. economic system and job marketplace. Career preparation and specialization begins with high school vocational education or college, professional or graduate schools.

career ladders for teachers A vertical scale of teacher job classifications offering increased pay, authority and professional recognition as the teacher progresses from trainee or apprenticeship level to master teacher. Depending on the state, career ladders may have as few as three or as many as 15 classifications, with teachers progressing up the ladder on the basis of formal examinations, peer reviews and observation by school administrators. Designed to attract and keep more gifted teachers in the

profession, career ladders have been adopted by about half of the states.

Carnegie, Andrew (1835–1919) Self-made steel magnate and the first of the great philanthropists in American public education. Raised in poverty, Carnegie's family emigrated from his native Scotland to the United States in 1848 and settled in Allegheny (now Pittsburgh), Pennsylvania. He took a job as a bobbin boy in a cotton mill at \$1.20 a week, and compensated for his lack of formal schooling by spending his spare time in a local public library. There, he taught himself to sight-read telegraphic messages and parlayed his knowledge into a job with the Pennsylvania Railroad, where after 12 years, he became superintendent of the Pittsburgh division. His work with the railroad and subsequent service in the Civil War convinced him of the future importance of steel. In 1865, he formed the Keystone Bridge Company to build steel railroad trestles. Gradually absorbing other, smaller steel companies, he built Keystone into the giant Homestead Steel Works which, in 1889, he consolidated with other holdings into the Carnegie Steel Company, with control of 25% of American iron and steel production.

In that year, however, he also published his startling article entitled "Wealth," in the *North American Review*. Better known as "The Gospel of Wealth," Carnegie shocked his "robber baron" peers by charging that the rich had a duty to distribute their surplus wealth to better the lot of mankind and civilization. Carnegie referred to his own salary of \$50,000 a year: "Beyond this," he said, "never earn, make no effort to increase fortune, but spend the surplus each year for benevolent purposes." His own first public gift was made in 1873, when he provided funds for baths in the town of his birth, Dunfermline, Scotland. During the 1890s, Carnegie distributed more than \$39 million to more than 1,400 communities to

build 2,500 library buildings, first in communities where Carnegie had company holdings and later to communities throughout the United States. Having benefited from such a library himself when he was a boy, he stipulated that his gifts be used only to establish community libraries that would be "the property of all" and open to all and that they be maintained by community taxes. "I do not think that the community which is not willing to maintain a library had better possess it. It is only the feeling that the Library belongs to every citizen, richest and poorest alike, that gives it a soul, as it were. The Library Buildings which I am giving are the property of all the members of the community which maintains them."

At the time, there were about 4,000 libraries in the United States, but only about 1,000 were truly "public"—that is, open to all and maintained by the communities. A few private libraries, endowed by benefactors who saw the role of their institutions as "people's colleges," were also open to the public. The rest, however, were usually repositories, designed to preserve the world's knowledge. Open only on weekdays during hours convenient for scholars, most were virtually inaccessible to workers and other people with jobs.

Carnegie's gifts not only allowed communities to erect buildings for existing collections, they permitted communities in many rural areas without books to buy collections for the first time. In 1900, he carried his work a step further by endowing the Carnegie Institute of Technology, which became one of the premier engineering schools in the United States. In 1967, it merged with Mellon Institute to become Carnegie-Mellon University.

In 1901, Carnegie sold his steel holdings to the United States Steel Company for \$250 million and retired from business to devote the rest of his life to philanthropy. In 1902, he founded the Carnegie Institution in Washing-

ton, which helped endow other colleges. In 1904, he financed the construction of the Palace of Peace in The Hague, the Netherlands, which now houses the United Nations International Court of Justice. In 1910, he established the Carnegie Endowment for International Peace to abolish war. In 1911, he set aside \$125 million to form the CARNEGIE CORPORATION OF NEW YORK to manage all his future philanthropic gifts. Among these were endowments to libraries throughout the English-speaking world, including 300 in Britain and gifts to many colleges, including such black colleges and universities as TUSKEGEE INSTITUTE.

Carnegie Commission on Educational Television A group of leading Americans whose study of the television industry in 1967 led to the creation of the first public television network in the United States. Made up of leaders from higher education, business, labor, politics and the arts, the commission was appointed by the CARNEGIE CORPORATION OF NEW YORK in 1965 to study the potential of noncommercial television as an educative institution. Funded by a \$500,000 grant, the study led to congressional passage of the Public Broadcasting Act of 1967 and creation of the CORPORATION FOR PUBLIC BROADCASTING, the first federally chartered, publicly owned (but non-governmental) national educational radio and television broadcasting network in the United States.

At the time, growing public dissatisfaction with the quality of commercial programming had led to demands for action from Washington to create a competitive public network comparable to the British Broadcasting Corporation and Canadian Broadcasting Corporation. Although there were about 100 local, independent nonprofit educational television stations in some 35 states, they were not interconnected in a network, and because they were funded locally, most were struggling to survive

the competition from well-financed commercial networks.

The commission urged Congress to establish the Corporation for Public Broadcasting to develop a network of noncommercial stations and underwrite production of appropriate programs by public and private producers. Passed in 1967, the law was hailed as the most significant federal legislation in the history of American education since the Land Grant (Morrill) Act of 1862.

Among the commission members were James R. Kilian, chairman of the Massachusetts Institute of Technology Corporation (or board of trustees); James B. Conant, former president of Harvard; Lee A. DuBridge, president of the California Institute of Technology; newspaper publisher Oveta Culp Hobby, former secretary of the Department of Health, Education and Welfare; Polaroid Corporation chairman Edwin H. Land; Governor Terry Sanford of North Carolina; United Automobile Workers vice president Leonard Woodcock; and concert pianist Rudolf Serkin.

Carnegie Commission on Higher Education A 19-member group formed in 1967 by the CARNEGIE FOUNDATION FOR THE ADVANCEMENT OF TEACHING to study and propose reforms for higher education, which seemed in turmoil in the wake of student rioting that had disrupted campuses across the United States. Made up of leaders in the field of higher education and funded by the CARNEGIE CORPORATION OF NEW YORK, the commission prepared 22 reports over six years. The reports discussed a wide range of problems, including federal aid to higher education, college access, education costs, tuition, medical schools, black colleges and electronic technology.

The commission issued its first report in 1968, urging adoption of a federal Civilian Bill of Educational Rights guaranteeing higher education to all qualified students regardless of

their ability to pay. In 1970, the commission reported, "the most serious shortages of professional personnel in any major occupational group . . . are in the health services." It urged construction of more medical schools and a shortening of the required training time for doctors from eight to six years and from four to three years for dentists.

In 1971, the commission called for tripling federal aid to the 105 black colleges and universities because formerly all-white colleges and universities were absorbing the most gifted black students and leaving black colleges with the neediest and most educationally ill-prepared students, who often required costly remedial training.

Other commission reports warned American colleges and universities to trim spending because they were "reaching a ceiling in the amount of money [they] can expect from society."

Carnegie Commission on the Future of Public Broadcasting An ineffectual group put together in 1977 by the CARNEGIE CORPORATION OF NEW YORK to propose means of making public broadcasting financially and politically independent. Although the CORPORATION FOR PUBLIC BROADCASTING (CPB) had scored notable successes as an educative institution during its first decade, production costs had soared to levels that required constant, on-the-air fund-raising appeals, the frequency and tone of which were indistinguishable from advertisements on commercial stations. Moreover, public television had become susceptible to political influence because its board members were appointed by the president of the United States.

The Carnegie Corporation of New York, whose Commission on EDUCATIONAL TELEVISION had helped create the CPB, formed a new commission in 1977. Headed by Columbia University president William J. McGill, the commission issued a report called *A Public Trust*, suggesting

that CPB be replaced by a Public Television Trust that would, in effect, make public broadcasting operations independent of financial and political influence. Neither Congress nor the White House paid any attention to the report.

Carnegie Corporation of New York Largest of industrialist ANDREW CARNEGIE'S philanthropic foundations. Established in 1911 with a capital gift of \$125 million, the corporation centralized and managed Carnegie's far-reaching philanthropic work. Dedicated to "the advancement and diffusion of knowledge and understanding," its earliest gifts helped establish public libraries throughout the English-speaking world. He arranged to build some 300 public libraries in Scotland (including one in Dunfermline, his birthplace), Britain and the other Commonwealth countries. The foundation also underwrote education of African Americans in the South.

After World War I, when the public library movement in the United States made private funding less essential, the corporation turned its attention to colleges, universities, professional associations and other educational organizations such as museums and, much later, educational television and a much broader range of educational needs.

Carnegie Foundation for the Advancement of Teaching A private foundation founded in 1905 by American industrialist-philanthropist ANDREW CARNEGIE as a free, nonprofit pension fund for American and Canadian college teachers. A group of university presidents led the foundation after Carnegie's death and shifted its focus to elevating educational standards in the United States. In 1918, the foundation converted its pension fund into the independent Teachers Insurance and Annuity Association, a nonprofit company which, together with the College Retirement Equities Fund, is the world's largest such pen-

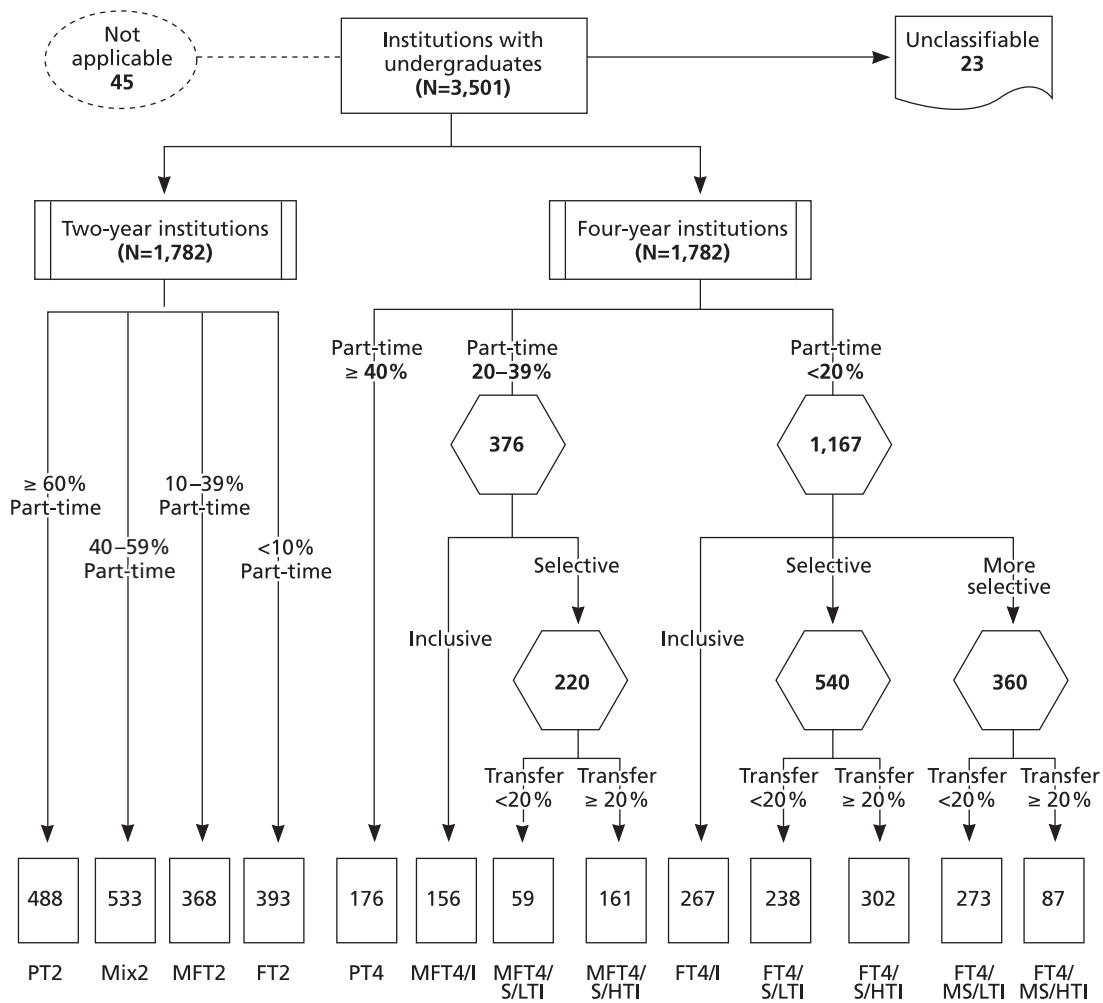
sion fund, with assets of more than \$125 billion, providing pensions to teachers at all levels of education.

The Carnegie Foundation, meanwhile, has grown into the largest private organization monitoring educational quality and trends in the United States. In 1988 alone, its studies led to such landmark reports as *The Condition of Teaching: A State by State Analysis*; *An Imperiled Generation: Saving Urban Schools*; and *Report Card on School Reform: The Teachers Speak*. In 1981, the foundation published *Higher Learning in the Nation's Service* by foundation president ERNEST L. BOYER and former *New York Times* education editor Fred M. Hechinger, who warned, "Unless we find better ways to educate ourselves as citizens, we run the risk of drifting unwittingly into a new kind of Dark Age. . . ." Two years later, the foundation published Boyer's book *High School: A Report on Secondary Education in America*, one of the most scathing criticisms ever directed at the American educational community.

The foundation also publishes a classification system for the more than 4,300 U.S. colleges and universities—a system designed to discourage the practice of "ranking" colleges by characteristics other than educational offerings and related activities. Universities offering doctoral programs, for example, are classified according to the amount of research activity on campus, while colleges and universities offering master's degree programs are classified by the number of degrees awarded each year. Revised five times since its development in 1970, the latest Carnegie classification system was released in 2006 and includes six categories (see table on page 195).

Carnegie unit A unit for measuring the amount of high school academic work by the number of classroom hours spent in one subject. Developed in 1899 by a committee of the NATIONAL EDUCATION ASSOCIATION, one Carnegie

Undergraduate Profile



Undergraduate Profile Classification Categories

PT2: Higher part-time two-year
Mix2: Mixed part/full-time two-year
MFT2: Medium full-time two-year
FT2: Higher full-time two-year

PT4: Higher part-time four-year
MFT4/1: Medium full-time four-year, inclusive
MFT4/S/LTI: Medium full-time four-year, selective, lower transfer-in

MFT4/S/HTI: Medium full-time four-year selective, higher transfer-in
FT4/1: Full-time four-year, inclusive
FT4/S/LTI: Full-time four-year, selective, lower transfer-in

FT4/S/HTI: Full-time four-year selective, higher transfer-in
FT4/MS/LTI: Full-time four-year, more selective, lower transfer-in
FT4/S/LTI: Full-time four-year, more selective, higher transfer-in

Source: Carnegie Foundation for the Advancement of Teaching.

	Public	Private nonprofit	Private for profit	All
Associate Colleges				
Public rural-serving small	128	0	0	128
Public rural-serving medium	310	0	0	310
Public rural-serving large	144	0	0	144
Public suburban-serving single campus	112	0	0	112
Public suburban-serving multicampus	97	0	0	97
Public urban-serving single campus	32	0	0	32
Public urban-serving multicampus	152	0	0	151
Public special use	14	0	0	14
Private nonprofit	0	110	0	110
Private for-profit	0	0	516	516
Public two-year under four-year universities	55	0	0	55
Public four-year primarily associate degrees	18	0	0	18
Private nonprofit four-year primarily associate	0	19	0	19
Private for-profit four-year primarily associate	0	0	70	70
Research Institutions				
Research universities (very high research activity)	62	32	0	94
Research universities (high research activity)	77	25	0	102
Doctoral/research universities	27	47	8	82

Source: Carnegie Foundation for the Advancement of Teaching

unit in a subject equals 120 classroom hours lasting 40 to 60 minutes each and meeting four to five times a week, 36 to 40 weeks during each school year. Most high schools require 16 Carnegie units per subject for graduation, including required courses such as English, mathematics, American history and science.

The Carnegie unit came into being after the National Education Association sought to reduce the confusion over the meaning and

	Public	Private nonprofit	Private for profit	All
Associate Colleges				
Master's colleges and universities				
Larger programs	167	164	18	349
Medium programs	69	121	13	203
Smaller programs	34	97	12	143
Baccalaureate colleges				
Arts and sciences	37	225	3	265
Diverse fields	69	250	16	345
Baccalaureate/associate colleges	34	31	55	120
Special-focus institutions				
Faith-related	0	314	0	314
Medical	29	28	0	57
Other health	5	98	25	128
Engineering	1	5	2	8
Other technology	1	6	50	57
Business	0	29	39	68
Art/music/design	4	60	42	106
Law	5	25	2	32
Other	0	32	7	39
Miscellaneous				
Tribal colleges	23	9	0	32
Classification pending	0	1	0	1
Not classified	18	12	30	60
Total	1,734	1,740	908	4,382

value of course credits at high schools with varying class lengths, academic years and academic standards. The Carnegie unit attempted to standardize all three.

carrel An isolated, desk-type work area in a library or school resource center, where a student may work alone, undistracted by visual or aural contact with others. Often called study carrels or individual study carrels, they may be

simple or complex. The simplest, so-called dry carrel, consists of a surface work area, usually with an undershelf to store books, and three vertical partitions along the right, rear and left sides of the desk to block peripheral vision of the surrounding area. Complex, or wet carrels, may include electrical outlets, audiovisual equipment and links to central computers to permit data retrieval.

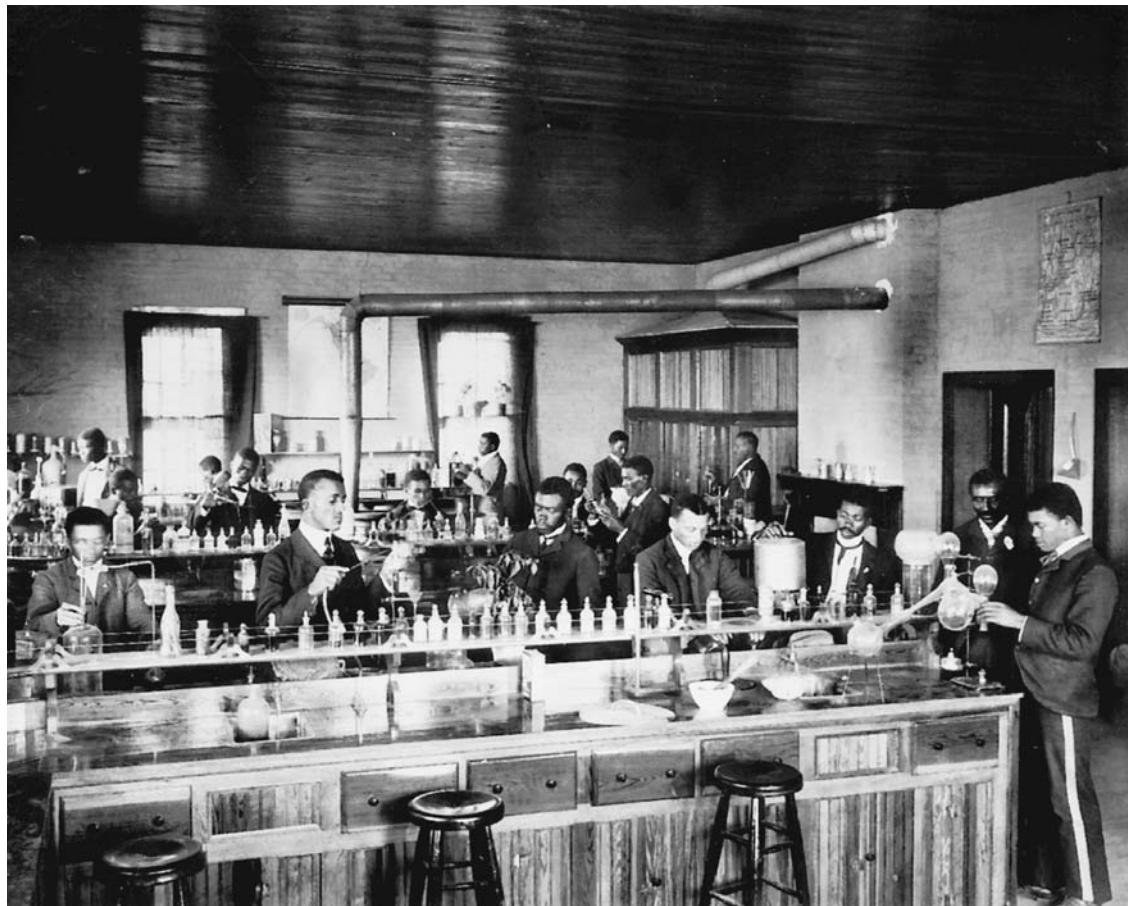
Carter, James G. (1795–1849) Educational reformer, teacher, journalist and legislator who spearheaded the establishment of public schools and teacher training colleges in Massachusetts. After graduating from Harvard in 1820, Carter spent 10 years teaching at private schools, where he developed the inductive method of teaching, whereby students learn by induction instead of rote memorization. He also wrote several textbooks. Carter gained statewide attention and influence with a series of pamphlets he published detailing the decline in common school education in Massachusetts. In 1826, his *Essays upon Popular Education* warned that education would become extinct if the state legislature continued to “shift the responsibility upon the towns, and the towns upon the districts, and the districts upon individuals. . . .”

Elected to the state House of Representatives and named chairman of its Committee on Education, he called for the state to take control of education and establish public teacher training institutes. In 1836 and 1837, he proposed and won passage of laws creating a state board of education headed by a superintendent of schools. Unfortunately, the law gave the board little authority and few funds. But Governor Edward Everett, himself a staunch supporter of public education, appointed such influential men as Harvard president JARED SPARKS and leading industrialists to the board, along with Carter, and he named the popular and powerful state senator HORACE MANN to head it.

Carver, George Washington (1864–1943) African-American educator and scientist, whose work and influence helped the largely trade-oriented black colleges of the South evolve into universities for the study of the arts and sciences. Born of slave parents in Missouri, Carver remained illiterate until he was almost 20, when he left the farm where he was born, to work his way through high school. Enthralled by the educational experience, he enrolled at the Iowa State College of Agriculture and Mechanic Arts, earned his bachelor’s degree in 1894 and won appointment to head the college’s greenhouse and bacterial laboratory in botany.

After earning his M.A. at Iowa State in 1896, Carver was named director of the department of agricultural research at Tuskegee Institute, an all-black vocational college that BOOKER T. WASHINGTON had founded and still headed. Carver introduced university-level science education and research at Tuskegee, where he remained the rest of his life. In addition to helping transform the institute into a university and training several generations of black scientists, Carver conducted pioneer research in soil management and crop production and directed an experimental farm. He developed commercial uses for peanuts, sweet potatoes and soy beans and helped transform southern agriculture from a single-crop (cotton) to a multicrop economy. He discovered that rotating peanut and sweet potato crops with cotton replenished soil nutrients that cotton alone had depleted. His discovery allowed the South to renew its exhausted lands at a time when the economy had badly deteriorated.

Carver also developed more than 100 by-products from peanuts, sweet potatoes and soy beans. From peanuts, he derived milk and coffee substitutes, cheese, flour, ink, dyes, soap, bleach, wood stains, metal polish, shaving cream, linoleum, synthetic rubber and plastics. Sweet potato by-products included



George Washington Carver (front, second from left) at his laboratory bench at Tuskegee University (*Library of Congress*)

flour, vinegar and molasses, while soy bean by-products included cooking oils, lubricants, medicines and face creams. He also developed a new variety of cotton plant called Carver's Hybrid—a hardy cross between short-stalk and long-stalk cotton.

case conference A formal, on-the-record meeting between two or more professionals to discuss a student with whom they are associated in or out of school. In the most common case conference, one or more teachers

and a supervising administrator or guidance officer simply discuss and evaluate a student's past performance and agree on a strategic plan for encouraging improvements or continuing success. More complex conferences may require participation of the school nurse, remedial teaching specialists, disabilities specialists, school or visiting psychologists or social workers.

In all cases, conferences are run as formal meetings, and notes are taken to assure the legal rights of the student, or "client," and to assure

agreement among all participants about the specific results they seek and about the strategies to help produce those results. Depending on the circumstances, case conference reports may be presented later to the student's parents, administration officials, psychiatric or social workers, court officials and others concerned with a student's educational and social activities.

One classic model for case conference developed by Michael Tracy and other researchers at Indiana University's Department of Public Instruction suggests a seven-step process of client referral: appointment of conference committee members, collection of client data, data discussion, development of an individualized educational plan for the client, placement decisions, and review and follow up.

case history The confidential file containing a student's entire school record, including notes by teachers, counselors, school psychologists, administrators and others who have had direct or indirect contacts with the student. Under the Family Educational Rights and Privacy Act, or BUCKLEY AMENDMENT, case histories are now subject to inspection, review and emendation by students who have reached the age of majority or by parents of students who are minors.

case study In education, a classical approach to understanding the possible causes of behavior by a student or student groups. Case studies consist of three elements: a description of the behavior under examination, a complete case history (often coupled with the results of current data from questionnaires, interviews, personal observations, tests, etc.) and a hypothesis of the cause of the current behavior and prediction of future behavior.

Because of the subjective nature of much of the researcher input, case studies by teachers can prove unreliable unless they are conducted in a highly controlled environment—difficult, at best, in a typical school situation—and over

a long enough period of time to produce the same results in statistically significant numbers. Most educational researchers agree that a case study only approaches reliability if a statistically significant number of other case studies have demonstrated the same cause-and-effect connections and the same results from appropriate remedial actions.

Castiglione, Baldassare (1478–1529) Italian diplomat and writer, whose classic work, *Il Cortegiano* (*The Book of the Courtier*, 1528), was one of the basic texts carried to the American colonies by educated English settlers. A basic element of the then-current "literature of civility," it served as guide, along with works from the "literature of piety," in the conduct of daily life and in the education of the young in early America. In effect, *The Book of the Courtier* describes the ideal European man: noble, gallant, virtuous, witty, fashionably dressed; a counselor of state with high regard for the arts and history and an active participant in physical education, athletics and dancing. Castiglione's ideal man was eventually Anglicized and Americanized in comparable literature produced in England and the colonies.

catalogs, school and college A broad range of brochures that usually include "VIEWBOOKS" and COURSE CATALOGS, a booklet of school rules and regulations and a yearbook-type brochure with pictures and backgrounds of school administrators, faculty and staff. Typically, viewbooks are designed to give applicants a broad picture or overview of the institution. Often somewhat self-serving, viewbooks are handsomely illustrated brochures with broad descriptions of the physical plant, curriculum and faculty quality. Secondary school brochures usually include a PROFILE of the previous year's graduating class, while college viewbooks give a profile of the latest incoming freshman class. Course catalogues

offer brief, one-paragraph descriptions of every course.

catechism A fixed list of questions demanding rote answers and, where appropriate, explanations. Used for centuries to teach the Scriptures and Christian church doctrine to the young, catechisms entered American education during the early colonial era as ministers and lay preachers assumed responsibilities for teaching the young. Colonial laws actually required parents to teach their children one or more of the 500 Christian catechisms from the Bible, the *Book of Common Prayer* and other religious texts. Because of the heavy burden of work in the colonial wilderness, most parents left the task to their parish clerics.

In 1669, Massachusetts passed a law formalizing the obligation of the clergy in all towns “to catechize and instruct all the people (especially youth) under your charge in the orthodox principles of the Christian religion, and that not only in public, but privately from house to house.” Connecticut followed suit a year later, and as ministers roamed from house to house, they assumed more and more general teaching obligations. They were, for example, gradually forced to teach the young how to read, for there was little hope in ever teaching them the Christian catechism if they could not read the Bible.

Catechetical teaching soon reached into mathematics and other nonreligious subjects and remained the basic method of instruction in colonial schools until the eve of the Revolutionary War, when lay instructors began introducing more imaginative and intuitive methods of instruction.

categorical aid Government funds provided to support a specific type or category of education or educational service, such as remedial education or bus service. Categorical aid is one of three types of government funding for education, along with BLOCK GRANTS and general or

standard funding of schools through budget-based taxes. Just as block grants give recipients more discretion over spending than they have with budget-based general funds, categorical aid gives the donor—the federal or state government—more than the usual power to influence and even override local educational policies. Thus, categorical aid for remedial education has led to the introduction of remediation in many schools that had been reluctant to pay for such programs themselves. Categorical aid for busing has been used to force recalcitrant communities to integrate schools.

Like block grants, categorical aid has been a center of controversy. Some legislators, for example, succumb to pressure by paid lobbyists to “ earmark ” for a specific college or university aid that might otherwise be distributed to large groups of more qualified institutions. Thus, one bill earmarked \$50 million in categorical aid for the University of Alaska to study the aurora borealis. The National Aeronautics and Space Administration, which had requested funds for the study, was left no choice in assigning the funds. Similarly, another NASA request for \$8 million for a planetarium was earmarked for Delta College, a two-year Michigan college without a science major at the time. Institutions typically pay \$10,000 to \$50,000 a month to lobbying firms to coax legislators into earmarking categorical aid.

Catholic schools Schools operated by or affiliated with the Roman Catholic Church or its representatives. Currently the largest group of religious schools, Catholic schools were slow to develop in the American colonies because of the predominance of Protestants and their pervasive, often violent prejudice against Catholics. Even the oldest continuously operated Catholic schools can trace their origins no further back than the 19th century. Although some Spanish Franciscans, Dominicans and Jesuits had settled in the southeastern

and southwestern portions of what is now the United States, only nine of the 260 churches in the English colonies in 1689 were Roman Catholic. The rest were Protestant. The first Catholic see was not established in the United States (or the American colonies, for that matter) until 1790, when John Carroll was named the first American Catholic bishop in Baltimore. The first two Roman Catholic schools opened in New York at St. Peter's Church, in 1801, and St. Patrick's Church (now Old St. Patrick's Cathedral), in 1815.

At the time, New York State was funneling public funds into common (public) schools run by Protestant churches, and New York's Catholic schools sought their share of those monies. Their request, however, caused a furor among Protestant legislators, who feared Jewish congregations might request similar educational financing. The legislature solved the problem in 1841 by denying all public funds to any school "in which any religious sectarian doctrine or tenet shall be taught, inculcated or practiced. . . ." Although other states followed suit, the new laws were less than effective at the classroom level, where teachers, usually Protestant, integrated their version of Christianity into the American history curriculum.

Fearful that the public school AMERICANIZATION process would Protestantize Catholic immigrant children, the Third Plenary Council of Baltimore decided to establish a Catholic school system. In 1884, it issued a mandatory and universal policy ordering every Catholic church in the United States that did not already have one to build a parochial school. Other decrees called for the construction of Catholic high schools, academies, colleges and the creation of diocesan boards of education to run the schools. To crown its new educational system, the council ordered construction of a Catholic University of America, which opened in Washington, D.C., in 1887. The council also

ordered all Catholic parents in the United States to send their children to Catholic schools unless specifically released from that obligation by the diocese. The order remained in effect until 1960.

The inevitable process of Americanization, however, made the goal almost impossible, and even where Catholic parents ardently favored sending their children to Catholic school, lingering ethnic hatreds from Europe often made it impossible for them to do so. Lithuanians, for example, refused to put their children in the hands of Polish priests. The Irish wanted their children taught by Irish priests, the Germans by German priests, and so on. By 1887, when the decrees of the Plenary Council were to have become law, there were 35 different ethnic parishes in Chicago alone. In addition, the issue of educating girls was also creating bitter differences in the church and, in turn, in the Catholic educational system. Rather than cope with these conflicts, many devout Catholics turned to non-sectarian public and private education and restricted the church's role in the upbringing of their children to spiritual education.

Nevertheless, the Catholic education system remained a powerful force in American education. By 1960, the Catholic population had climbed to 42 million. The school system had almost 13,000 elementary and secondary schools, with a student population of about 5.25 million students. In addition, the church boasted nearly 400 colleges, ranging from small institutions for sisters and brothers to giant universities such as Notre Dame, Fordham and the Catholic University of America. Since its peak in 1960, however, the Catholic educational system has contracted. For one thing, millions of urban Catholics joined Protestants and Jews in the mass migration to the suburbs, where there was a dearth of religious schools. Moreover, high suburban property taxes made it more economical to send chil-

dren to local public schools rather than incur duplicate costs of paying school taxes and Catholic school tuition.

As Americanized urban Catholics abandoned their city parishes and parochial schools, a new wave of Catholic immigrants arrived from abroad—mostly semiliterate, usually Spanish-speaking and too poor to support local Catholic churches and parish schools. Many schools simply closed. Others suffered declines in academic standards because they were no longer able to pay high enough salaries to attract the most qualified teachers. By 2005, fewer than 6,600 Catholic elementary schools and just over 1,200 high schools remained, and the student population had dropped to about 2,420,000—13.6% of them non-Catholics. Only about 10% of Catholic children in the United States still attend Catholic schools. In many inner-city neighborhoods long since abandoned by white Catholics, the few remaining Catholic schools often have student populations that are 65% or more non-Catholic. Nationally, minorities make up more than 27% of students—nearly three times the number 30 years ago. Hispanics make up nearly 12% of students, blacks nearly 8%, and Asians nearly 4%.

There are four types of Catholic schools: parochial (usually elementary) neighborhood schools run by the local parish priest; interparish schools cooperatively run by several parishes; diocesan schools (usually high schools) run by a school board appointed by the diocese; and private schools (usually college preparatory, academy-type schools) run independently of the church by a devoutly Catholic board of trustees. In almost every category of achievement, students in Catholic schools outperform their counterparts in public schools, although costs per pupil are about the same. Catholic high school drop-out rates average less than 2%, compared with 10.7% for public schools. About 97% of Catholic school children go on

to college, compared with only 65.9% of public school children. Traditionally, Catholic school students have scored an average of 5% to 10% higher than same-age public school students on proficiency tests for most academic disciplines and about 20% higher on college admissions tests, but state and local governments, as well as college admissions testing organizations, have stopped breaking down and reporting such results on the basis of religion.

There are several reasons for Catholic-school educational successes. Like all private schools, they refuse to admit unruly, disruptive children. Unlike public schools, with “cafeteria-style” curricula of 200 or more courses for a wide range of students, Catholic schools offer only a basic core curriculum of required courses such as English, mathematics, science, social studies and foreign languages.

Besides Catholic University of America, which is under direct control of the church, there were 237 Roman Catholic colleges and universities in 2001, all of them directed by Catholic clerics or Catholic laymen but with no direct, official ties to the church. All offer a broad enough range of secular studies to compete with comparable nondenominational institutions of higher learning. With 650,000 students—many of them non-Catholic—such universities and colleges offer a mixed curriculum, whereby secular studies are taught in an atmosphere of academic freedom, while theology courses are dictated by the church and the colleges must certify that all theology courses teach “authentic Catholic doctrine.”

Catholic University of America The national university of the Catholic Church in America. Founded in Washington, D.C., by American bishops in 1887, Catholic University was conceived as a graduate and research center for the study of “all branches of literature and science both sacred and profane.” There are now

seven undergraduate and 10 graduate schools offering the full range of courses in the liberal arts, sciences and professions. The faculty numbers about 230, for a coeducational population of more than 5,700 from all 50 states and more than 33 countries. Minorities make up more than one-quarter of the student population.

Cattell, James McKeen (1860–1944) Pioneer in experimental psychology and psychological testing and editor of five scholarly journals and two biographical directories. A cofounder of the AMERICAN ASSOCIATION OF UNIVERSITY PROFESSORS, Cattell developed such important intelligence tests as the Cattell Culture Fair Intelligence Test to disassociate intelligence measurement from educational and cultural influences, and the Cattell Infant Intelligence Scale to assess the development of infants and young children under two and one-half years old.

Born in Easton, Pennsylvania, the son of the president of Lafayette College, Cattell was educated at Lafayette and the Universities of Göttingen, Leipzig, Paris and Geneva. He lectured at Cambridge University from 1886 to 1888 before accepting an appointment as professor of psychology at the University of Pennsylvania. Three years later, he went to Columbia as professor and chairman of the department of psychology, where he remained 26 years. While there, he developed tests of reaction times, intelligence, judgment and other mental processes and became the first psychologist to use the term “mental test.” Equally important to the world of education was his work as an editor of scholarly journals. He founded and edited *Psychological Review* from 1894 to 1904 and *School and Society* from 1915 to 1939. He was also editor of *Science* (from 1894), *Scientific Monthly* (from 1900) and *American Naturalist* (from 1907). *Science* became the official publication of the American Association for the Advancement of Science in 1900. Cattell

also founded the biographical directories *American Men of Science* in 1906 and *Leaders in Education* in 1932.

His involvement in the founding of the American Association of University Professors stemmed from his continuing personal conflicts with the autocratic president of Columbia University, Nicholas Murray Butler. In 1917, the Columbia University Board of Trustees fired him for his opposition to U.S. entry into World War I. In 1921, he founded The Psychological Corp., to develop and publish tests for education and industry. In 1924, he was elected president of the American Association for the Advancement of Science.

ceiling budget A spending plan whose annual percentage increases are limited by law. Introduced during the depression of the 1930s, ceiling budgets were imposed on school boards to limit increases in property taxes and, in turn, the rate of personal bankruptcies and mortgage foreclosures. Different states adopted a wide variety of ceiling budget laws. Some simply specified the maximum percentage by which any school district could increase its budget each year. Others put ceilings on tax rates, while others required public referenda to approve budget increases that exceeded specific percentages. Still other states forced school districts to obtain state approval for any budget increases or bond issues. Ceiling budget laws have had mixed results. In some areas, they promote efficiency and discourage wasteful spending, but in others they have hurt educational standards by preventing needed spending on costly programs such as computer education and special education.

ensorship The alteration, suppression or eradication by governmental or other authorities of materials and ideas they deem inappropriate. Although long a source of conflict and

mixed feelings among Americans, censorship has been an integral part of American education at every level since colonial times, when Protestant churchmen controlled schooling and censored all materials considered heretical and, therefore, either an affront or a threat to the church and its beliefs.

Traditionally, censorship in every land has been designed to protect the integrity of three basic institutions: the church, the state and the family. Heretical, pornographic and unpatriotic or antigovernment materials have, therefore, been the prime targets of censors. The First Amendment of the Constitution of the United States was the first official document ever to deny government the right of censorship. "Congress," it says, "shall make no law . . . abridging the freedom of speech or of the press. . . ." The Constitution did not, however, deny individual states the right of censorship. Until the Civil War, every southern state banned abolitionist literature. After the Civil War, schools throughout the South and in many areas of the North banned books that taught the theory of EVOLUTION or denied any but the most literal interpretation of the Bible as the true history of the world and the development of man.

Until recently, both the U.S. Post Office and Customs Service as well as local and state police actively seized books and other materials they considered obscene or seditious. Local police continue to do so in many areas of the United States. It was not until the 1920s that the U.S. Supreme Court ruled that the First Amendment applied to state governments as well as the federal government. The Court did not, however, hold censorship to be unconstitutional. Indeed, the Court has ruled that the government has broad rights to prevent publication of a wide variety of materials during wartime if it deems those materials to be of danger to national security. It has upheld the government's right to suppress free speech

when such speech might "create a clear and present danger that . . . [the government] has the right to prevent"—as in the classic cases of someone falsely and maliciously shouting "fire" in a crowded room or, more recently, making a reference to bombs or weaponry while approaching or on board an airplane.

As for printed materials, the first federal court decision to curtail government erosion of First Amendment rights came in the 1930s, when it ruled that federal authorities did not have the right to ban importation of James Joyce's novel *Ulysses*, because it contained obscenities. The use of "dirty words" in "a sincere and honest book," said the court did not make the book "dirty." Although the *Ulysses* decision cleared the way for students at some independent colleges and universities to gain access to erotic works, state and local authorities continued to deny the public at large the same right, and the Supreme Court has never explicitly forbidden such authorities the right to do so. In the 1970s the Court issued a series of sweeping decisions that gave government the constitutional right to enact laws to censor "works which, taken as a whole, appeal to the prurient interest in sex, which portray sexual conduct in a patently offensive way; and which, taken as a whole, do not have serious literary, artistic, political, or scientific value." It also allowed any government at any level to apply "contemporary community standards," instead of national standards, in determining what constitutes obscene materials.

The net result of the Court's vague decisions has been to allow school boards, local government, local church leaders and parents to censor many materials used in American elementary and secondary schools. Apart from erotic books, many public schools in some parts of the United States have banned such socially provocative literature as John Steinbeck's *The Grapes of Wrath*, J. D. Salinger's *The Catcher in the Rye* and Mark Twain's *Huckleberry*

Finn. Nor have the courts interceded to prevent such censorship—except when it crossed the line into the area of religious freedom. Thus, the U.S. Supreme Court has consistently ruled that public schools may not teach “CREATION SCIENCE,” “creationism” or any other biblical interpretations of world history or the evolution of man and the Earth. In almost every other area, however, the Court has granted local school authorities, school boards and state educational authorities wide latitude to censor and otherwise control the materials used in elementary and secondary schools, and, indeed, denied minors attending such schools rights to free speech and publication that are routinely granted to adults.

Indeed, the Court ruled in the case of *CAMER V. EIKENBERRY* in 1983 that it lacked jurisdiction over subject matter taught in schools. Other court decisions have granted school authorities broad rights to censor student newspapers and other in-school publications, to regulate student speech and conduct and even student dress.

At the college and university level, however, the question of censorship becomes as murky as it remains for the rest of American adult society. Since 1971, when the age of majority was lowered to 18, and turned most college and university students from children into adults, those students have had the same constitutional rights in public facilities as adults everywhere. Even the most selective, private colleges are “public” if they receive any public funds, directly or indirectly, in the form of government awards to students or scholars. Only a handful of religious colleges remain so private that they can arbitrarily impose rules that limit a student or professor’s right to free speech and the right to publish.

Ironically, unfettered freedom from censorship has produced turmoil on some campuses, where hate groups have used their freedoms to intimidate fellow students and, indeed, impose

a form of reverse censorship on those who would oppose them. Many campuses have seen faculty and students join together to shout down the president of the United States and other speakers whose views differed from theirs, and faculties at Yale and Harvard, among other universities, banned Army and Naval RESERVE OFFICERS TRAINING CORPS programs and associated studies of military science.

In the guise of eliminating censorship, some colleges and universities appointed political activists to their faculties to preach instead of teach in their classrooms. In some cases, the results have been courses that have distorted, exaggerated or even invented historical facts, while others have simply taught outright racism.

To try to combat racism, some colleges have introduced strict rules against “hate talk.” The courts, on the other hand, have handled the problem on a case-by-case basis that has yielded a series of often vague and conflicting decisions. One court gave a university the right to suspend a student who, while drunk, shouted racial epithets in a college courtyard for all to hear. But another court forced City University of New York to reinstate a black studies department chairman who taught his students that blacks were a superior race, that whites were inferior and that Jews and Italians were responsible for the economic and social problems of the black community in the United States. Although a federal appeals court later reversed the decision, the university was forced to retain the professor on its faculty, along with a white Jewish professor who claimed as adamantly as his black colleague that blacks were an inferior race.

The indecision of the courts, however, may reflect the indecision of Americans themselves over the censorship question. Throughout history, no society and no educational communities have been as free from censorship as those in the United States. Such freedom can inflict pain and hurt on others, who may well respond

by attempting to restrict the right to speak and publish freely—until their own rights are curtailed. Censorship, like any other curtailment of individual rights, may simply be a part of the American dilemma over which individual rights are indeed inalienable. The Declaration of Independence declared only “certain” rights to be inalienable, but not all. The American educational community, like the courts and the rest of the American community, is still trying to define those rights. Most likely, the definition will continue to change from era to era.

Center for Death Education and Bioethics A section within the University of Minnesota Department of Sociology which provides educational programs on dealing with death, grief and bereavement. The first and only institution devoted exclusively to research on public attitudes toward and responses to death, the nonprofit center holds graduate and undergraduate classes on the subject and sponsors conferences and provides speakers. It also sells and rents audio and video tapes on such topics as “Death and the Family,” “Adolescent Suicide,” “Talking to Children about Death” and “Death and the Child.” The center also helps educate teachers and school administrators who must help students cope with the problem of death. In 2001, suicide—mostly by gunshot wounds—was the fifth most frequent cause of death among children under 15 and the third leading cause of death among young people 15 to 24, after accidents and homicides. According to the U.S. DEPARTMENT OF EDUCATION, 8.9% of America’s 16.2 million high school students—more than 1.4 million—were threatened or injured with a weapon on school property in 2001. Youngsters too young to be prosecuted as adults were the most likely to carry weapons, and indeed 12.7% of ninth graders and 9.1% of tenth graders report being threatened or injured by weapons on school property, compared with rates of about 6% for eleventh and twelfth grad-

ers. Only about 8.5% of white and Asian school children reported being threatened or injured by weapons at school, while 9.3% of black children filed such reports, 11.3% of Hispanic children, 15.2% of American Indians and native Alaskans and nearly 25% of Hawaiian and other Pacific island children.

Center for Educational Renewal A research organization founded in 1985 to study and improve the education of professional teachers in the United States. Founded by JOHN I. GOODLAD and two associates, the center has conducted comprehensive studies of teacher training to develop new methods of professional training and, in turn, to help improve quality of education in American public schools. The primary result of the center’s research has been the development of a new approach to teaching education through school/university partnerships, whereby future teachers divide their time between theoretical studies at college and practical training in working elementary and secondary schools. Akin to programs leading to degrees in medicine, law and other professions, training in a school/university partnership requires future teachers to spend their first two years at university studying the humanities, social sciences and other conventional college courses of direct and indirect value to the future teacher. The second part of the preeducation curriculum is school-based, using actual schools in the same way that teaching hospitals teach future doctors in actual hospital situations. Financed by continuing grants from the Exxon Foundation, the Ford Foundation and Southwestern Bell Foundation, the center established its initial pilot school/university partnerships at eight colleges and universities in California, Ohio, Massachusetts, New Jersey, South Carolina, Texas, Washington and Wyoming. By 2000, it had expanded to 40 institutions of higher education in 20 states and was serving 750 schools in more than 100 school districts.

Center for Research Libraries Chicago-based consortium of several hundred university libraries that make their collections available to scholars and researchers through interlibrary loan services. The center was founded in 1949 by 10 universities, with funds granted by the CARNEGIE FOUNDATION FOR THE ADVANCEMENT OF TEACHING and the ROCKEFELLER FOUNDATION. In addition to books and periodicals, scholars and researchers may tap each member library's collection of dissertations, archival records, government documents, periodicals and scholarly journals, monographs and other research materials.

cerebral palsy A vague term for nonfatal and nonprogressive brain damage and a wide range of associated symptoms. The latter vary widely with the degree of brain damage and may include various degrees of limb paralysis, involuntary spasms, lack of coordination, muscular weakness, seizures and mental insufficiencies. Some sufferers have imperceptible and virtually undetectable symptoms. Others may require braces or wheelchairs, physical or speech therapy, remedial and other special education, hearing aids, drugs and even surgery. Educational potential varies just as widely, with some palsy sufferers able to blend completely into the mainstream of conventional education and others requiring special educational and treatment facilities.

certification, professional The licensing, by a state, state-approved agency or professional organization, of teachers, school administrators and other school professionals. All states require certification of public school professionals before they are allowed to accept paid positions in public schools. Requirements for certification vary widely from state to state and may include American citizenship, proof of good health, minimum or maximum age, completion of a bachelor's degree, including successful

completion of specific education-related courses, completion of an approved teacher-training course or program, completion of a teaching apprenticeship and a minimum grade on a state-prepared teacher-competency test.

The types of certificates issued vary from state to state as well, some states issuing general certificates, others limiting the validity to specific subjects, grade levels, range of grade levels (elementary or middle school, for example) or area of competence, such as remedial reading or special education. Different certificates are usually issued for teaching, administrative and staff functions.

Certification became a center of national controversy in the 1980s and 1990s, as education reformers exposed low teacher certification standards as one source of poor public school educational quality. Most state certification examinations set low passing grades, allowing those who left as many as half the questions blank to pass. Indeed, standards were often so low that few states trusted the value of any out-of-state certification and refused to accept teachers with out-of-state credentials. A 1999 report by the Education Trust, a nonprofit Washington, D.C., organization that studies teacher preparation, found that most state certification tests for elementary school teachers required only ninth- or tenth-grade knowledge to pass and only about an eleventh- or twelfth-grade education to pass the tests for high school teachers. Moreover, the U.S. Department of Education found that one-third of all public school teachers lacked a major or minor in the subjects they taught.

By 2005, 48 states had responded by implementing higher teacher-certification standards as required under the federal NO CHILD LEFT BEHIND ACT OF 2001. All but seven states required prospective teachers to pass subject-knowledge examinations, and five required prospective teachers to have majored in the subject or subjects they were to teach. The new

state standards, however, still failed to meet federal requirements that all teachers be “highly qualified” in core teaching fields, and, by the beginning of the 2006 academic year, not a single state had met the deadline for qualified teachers. The AMERICAN FEDERATION OF TEACHERS favored universal adoption of a national standardized test that would certify teachers for all states. The National Board for Professional Teaching Standards offers such an examination for teachers seeking master status, while the EDUCATIONAL TESTING SERVICE administers the Praxis examination used by many states for basic certification.

certification, school The legal approval to operate a school. Unrelated to ACCREDITATION, certification is akin to a certificate of occupancy and, depending on state laws, is usually granted after a building has been found to be in compliance with fire safety laws and other regulations governing construction of and use of public buildings.

chaining The sequential behavioral process that underlies PROGRAMMED INSTRUCTION. Chaining occurs when a stimulus or question produces a response that automatically provokes a second question, the response to which will reinforce the original response. Thus, in programmed instruction, the information that must be learned is broken down into the smallest possible units or “frames,” each of which serves as a stimulus for a response that reinforces learning and allows the learner to progress to the next frame. Psychologists call the stimulus-response-stimulus-response sequence a “chain”—homogenous if the responses are related and heterogeneous if the responses are unrelated.

chalkboard A once-ubiquitous, four-foot-high, black or green slate panel affixed to classroom walls to permit teachers (and students) to write instructional materials in chalk for stu-

dents to copy into their notebooks. Of variable lengths, but often as long as a classroom wall, chalkboards began disappearing with the development of new DRY-ERASE BOARDS made of porcelain-coated steel that eliminates the problem of chalk dust—often a serious health problem for students with chalk-dust allergies and an equally serious problem for classroom computers if the dust invades the inner workings. Often called marker boards, dry-erase boards are easy to clean with any soft cloth, and they permit inscription of materials with ordinary felt-tipped marker pens in a range of colors that increase the instructor’s ability to categorize or emphasize different materials.

More recently, both chalkboards and dry-erase boards have been replaced with electronic screens called INTERACTIVE WHITEBOARDS on which teachers can write electronically, either with a stylus or with a keyboard, and project graphics and illustrations, thus dispensing with projection equipment.

chancellor Usually the president of a university or institution. More commonly used in-British universities, the word *chancellor* is derived from the Latin *cancellorius*, or “gatekeeper,” who guarded the gates that separated the public from the clergy in the chancel of Roman Catholic churches and from judges in the chancery of English law courts. Because Latin was the language in which classes were conducted in the early British universities, most administrative titles were given Latin names. In the United States, the last years of the 1900s saw the title reserved for the chief executive officer of multicampus state university systems, such as the 22-campus California State University, with 337,000 students and 18,000 faculty members, or the 34-campus University of Georgia system, with 200,000 students and 8,000 faculty members. Chancellors are the highest paid administrative officers in American education. The chancellor at the

California State System earned \$436,000 in the 1999–2000 academic year—the highest in the nation. The chancellor of the University of Georgia system earned \$324,000 and the State University System of Florida (10 campuses, 215,000 students; 12,000 faculty) paid its chancellor \$330,000.

Channel One A privately owned television network that began beaming news and current events programs to 8 million students in 12,000 schools in 47 states in 1990. Developed by publisher Christopher Whittle and his company Whittle Communications, of Knoxville, Tenn., Channel One provided 10 minutes of news and 2 minutes of commercials. The commercial, which cost \$200,000 a minute and generated revenues of more than \$100 million a year, paid for program costs as well as free installation of television sets and videocassette recorders in each classroom and all necessary wiring and satellite dishes in each school, if the school agreed to require students in sixth through twelfth grade to watch the entire 12 minutes of the program.

From its inception, Channel One met with opposition from many educators. Some were angered by the company's violation of its contracts with schools in the spring of 1993, when the company surreptitiously increased advertising time to two and one-half minutes on certain days of the week. When confronted, the company apologized and cut advertising to two minutes. Critics also cited a 1992 report, commissioned by Whittle Communications itself, which found that despite widespread popularity among students and teachers, the program had done little to increase student knowledge of current events. The majority of teachers and the boards of regents in both California and New York, the states with the largest student populations in the United States, adamantly opposed introduction of Channel One into their schools, and relatively few schools in either state introduced it into their classrooms.

By 1994, opposition to Channel One combined with high installation costs to curtail expansion while the company focused on increasing advertising sales. Whittle finally ceded ownership of Channel One to K-III Communications Corp., now known as Primedia, a media company with sizable interests in education-related properties such as the *Weekly Reader*, a newspaper for students, and *Funk & Wagnall's New Encyclopedia*. Partially owned by Time-Warner, Phillips Electronics of the Netherlands and Associated Newspaper Holdings in Britain, Primedia all but stopped expanding Channel One television in favor of Channel One Interactive, an Internet-based program that could bypass many of the controversies with school authorities and reach the American school-age population directly over the World Wide Web—and cost far less than installing television sets in every classroom.

Channing, William Ellery (1780–1842) American Unitarian clergyman who led the revolt against Puritan/Congregational dominance in U.S. education in 1820 and was a driving force behind the development of universal education. Born in Bennington, Vermont, Channing graduated from Harvard College in 1798. Five years later, he was ordained and installed as minister in the influential Federal Street Church in Boston and remained there the rest of his life. An eloquent speaker and prolific writer, he rejected the Puritan/Congregationalist doctrine of original sin and the innate depravity of man. Known as the “Apostle of Unitarianism,” he became the acknowledged leader of American Unitarians and other Protestants eager to escape the spiritual burdens of Puritanism. Channing preached a gospel of goodness, love, human dignity, moral responsibility and perfectibility of man—a doctrine that eventually replaced Puritanism as the central Protestant tenet in the United States.

In 1820, he called a meeting of liberal ministers in Boston that led to the formation of

the American Unitarian Association. Because of his deep belief in man as the child of God, he believed in the limitless possibilities of children to learn. He became an advocate for expansion of common, or public schools, and helped improve teacher training. He also advocated benevolent teaching methods that eschewed the use of the whip and ferrule to spur student learning. Channing was a patron of the progressive school in Boston started by A. BRONSON ALCOTT, and was a major influence in helping his parishioner HORACE MANN formulate his philosophy of education, which led to the founding of the first compulsory universal public school system in the United States.

“Chapter 1” (Title 1) The U.S. government’s main effort to improve basic academic skills of poor children by means of remedial programs in basic subjects. The \$12-billion-a-year program was the largest component of the ELEMENTARY AND SECONDARY EDUCATION ACT OF 1965. Reauthorized in 1994 and renamed title 1 under the Improving America’s Schools Act, it reaches nearly 8 million in two-thirds of the nation’s schools. About 75% are elementary school students. From its inception, the program was a target for criticism because its standard technique of pulling students out of class for 30 minutes of remedial work left the children behind in the classes they missed.

(See also COMPENSATORY EDUCATION.)

character development A broad area of education designed to teach students self-discipline, responsibility and good citizenship. Character development has provoked controversies in many public school districts between parents who prefer schools to be value-neutral and those who believe schools have an obligation to help shape their children’s characters.

The first group believes character development is the responsibility of parents and that schools should limit their work to academics.

Many fear some teachers may indoctrinate children in religious or moral codes that differ from their own. Their opponents point out that teachers see more of children during their waking hours than the average parent and that more than 20% of the children in the United States live in single-parent homes where character development is often at a minimum. Under such circumstances, a teacher’s role in character development becomes inevitable. One source of controversy over character development, say some educators, is public confusion over differences between teaching children how to make sensible value judgments and moral or religious indoctrination.

Schools with well-developed programs to encourage character development are specific in listing the values and attitudes they expect teachers to impart to students. Most stress the use of democratic government in the classroom as the basis for teaching self-discipline, responsible citizenship and student willingness to take responsibility for their own actions in their relations with teachers and other students. Other elements of character development in the classroom include teaching the benefits of civic behavior and cooperation, the harm to the community of careless or thoughtless behavior, the need for patience (waiting in lines, for example), the importance of obeying rules and the benefits of majority rule and respect for dissenting opinions.

Prof. Roe Christenson at Miami University produced a list used by many schools for teaching character development: “Acknowledging the importance of self-discipline; being trustworthy; telling the truth; being honest in all aspects of life; having the courage to resist group pressures to do what we would refuse to do if alone; being ourselves, but being our best selves; using honorable means that respect the rights of others; conducting ourselves in a manner that does not fear exposure; having the courage to say, ‘I am sorry. I was wrong.’; practicing

good sportsmanship; maintaining courtesy in human relations; treating others as we would wish to be treated; recognizing that behavior that may seem purely private often affects others; doing work well, whatever that work may be; showing respect for the property of others; giving obedience to the law; respecting democratic values of free speech, a free press, freedom of assembly, freedom of religion and due process of law; and developing habits that promote good health and refraining from those that don't."

The U.S. Department of Education sets aside more than \$5 million a year to subsidize character development, and 28 states are using the funds either to train teachers to bring in outside organizations to teach moral values. In the South, Character First!, a Christian organization, teaches morality in more than 600 public elementary schools, although it is careful to steer clear of all discussions of religion—as does "The Curriculum Initiative" started by a Jewish organization. The latter focuses on such "earthly" topics as "how you treat a stranger"; "gossip and slander"; and "relationships with parents, friends and teachers." A secular organization, the Concerned Businessmen's Association of America" says it has reached 12 million elementary school children since 1983 with its "Set a Good Example Contest," which teaches "honesty, trust, competence."

charitable giving A source of nearly \$250 billion in revenues a year for educational institutions and a wide variety of other organizations, including emergency aid to the needy, religious groups, arts and cultural organizations, human services groups and environmental causes, among others. Religious groups receive the largest percentage of charitable giving each year—about 35.5%—followed by educational institutions and affiliated organizations (13.6%); foundations (9.7%); health

organizations (8.8%); human services (7.7%); arts and cultural organizations (5.6%); public-benefit organizations such as veterans' groups, consumer protection groups, and so on (5.2%); environmental and animal organizations (3.1%); and international-affairs organizations (2.1%). The Salvation Army received the largest total in 2005—\$1.32 billion. The American Cancer Society and Gifts in Kind International each received \$760 million, and Lutheran Services in America received the fifth largest total of \$720,000. The most generous donors were the BILL AND MELINDA GATES FOUNDATION (\$3.4 billion), Susan T. Buffett Foundation (\$2.6 billion), John M. Templeton, (\$550 million), Caroline Weiss Law (\$450,000), and George D. Cornell (\$200,000). Individuals accounted for 76% of charitable giving, while foundations provided 12%, bequests 8% and corporations 5%.

Charles E. Stuart and Others v. School District No. 1 of the Village of Kalamazoo and Others A precedent-setting case in 1874 that not only established the right of town officials to raise taxes to pay for a public high school, but allowed them to offer all children in their district a free classical as well as practical education.

The Kalamazoo case, as it is usually called, had its origins in 1858, when the local school district in Kalamazoo created a district high school that not only taught practical subjects for those children bound for careers as tradesmen, but also classical languages, mathematics, natural sciences and other subjects required for entry into university. Until then, Michigan, like most other states, had two separate systems of education: a practical system of free primary and secondary schools that taught just enough to produce literate working people, and a small, academically oriented academy-type primary and secondary school system that fed its graduates—usually the sons of the wealthiest families—into the university. The unification of the two systems along with the possibility that

children of common families might enter the university outraged Kalamazoo's prominent citizens and wealthiest taxpayers.

In 1873, they sued to restrain the school board from spending public funds on a new, unified high school. The local circuit judge ruled against them and, when they appealed the verdict a year later, the Michigan Supreme Court upheld the lower court and stated unequivocally that the school board had the right to operate a public high school with tax funds and to put "the elements of classical education . . . within reach of all the children of the state. . . ." Chief Justice Thomas M. Cooley then admonished the plaintiffs, saying, "education, not merely in the rudiments, but in an enlarged sense, was regarded as an important practical advantage to be supplied . . . to rich and poor alike. . . ."

The Kalamazoo case set a precedent for other states. As a result, American public schools in every state became single systems in which poor as well as rich could prepare for university or the practical crafts, according to their own desires and ambitions.

charter school An autonomous public school created and operated by teachers, parents, foundations or profit-making businesses, independently of state and local school boards. First introduced in Minnesota in 1991, the charter school concept was developed as part of the nationwide effort to reform public school education by freeing it from control by huge, unresponsive bureaucracies and unleashing the creative energies of teachers and those in closest contact with students. The hope was that innovative teaching methods developed in charter schools would have a ripple effect on conventional public school education and breathe fresh life into what much of the general public considered a moribund system.

By 2005, 40 states had passed charter school laws and, by then, about 3,300 such

schools had opened their doors to an average of 300 students each. About half were elementary schools. Although the laws varied from state to state, they typically allowed parents, teachers or just about anyone else, including private, for-profit organizations and companies to establish publicly funded charter schools, with the approval of the local school district and/or state education authorities. The state and local school districts, in turn, paid each charter school the same per-student funds they dispensed to conventional schools. In addition, it waived most state and local academic rules and regulations, along with union rules and teacher pay requirements. Each charter school agreed, however, to produce specific academic results within a specific time period or be reabsorbed into the conventional public school system.

By 2003, many charter schools seemed to be failing in their broad academic mission. According to an analysis of scores from the 2003 NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS, 33% of charter school fourth graders displayed below basic proficiency in math, compared with 24% of fourth graders at conventional public schools, and 45% showed less-than-basic proficiency in reading, compared with 38% at conventional public schools. At the eighth grade level, 42% displayed less than basic proficiency in math, compared with 33% in conventional public schools, and 33% scored below basic levels of proficiency in reading, compared with 25% in traditional public schools.

Trumpeted by opponents of charter schools as clear evidence of their failure, the lower achievement scores seemed less significant after examination of the characteristics of the schools and their students. Almost one-third of the charter schools studied were less than two years old and, therefore, in unsettled, start-up condition. Moreover, 60% of the schools were in central-city minority areas, compared with only about 30% of conventional public schools.

Half the students in the charter schools studied were living in poverty, compared with 15.8% of students in conventional public schools, and even more telling, fewer than 50% of charter school students were white, compared with about 60% at conventional schools. African Americans made up about 35% and Hispanics 15% of the charter school student population, whereas each group made up only about 17% in conventional public schools.

In practice, many charter schools—indeed nearly 25%—evolved into special-purpose schools. Some absorbed high-risk students. At least one teaches only deaf children, using sign language exclusively. Still another, near a Dakota Indian reservation, teaches the Dakota language to Indian teenagers. Some charter schools accommodate gifted students in areas with no private schools or private schools too costly for most families to afford, while a large segment of schools opened in low-income urban neighborhoods to offer undereducated minority children alternatives to failing local public schools.

Teacher unions and entrenched administrators at conventional schools have opposed the concept of charter schools since their inception—in some cases with good reason. For one thing, a charter school had no obligation to recognize the local school board's contract with teacher unions—and, indeed, most charter schools do not. In siphoning students from conventional public schools, charter schools reduce the need for teachers and staff at the public schools, and although teachers can fill new positions created at charter schools, the charters have no collective bargaining agreements with teacher unions, and teachers invariably sacrifice all union benefits. For former public school nonfaculty staffers, charter schools offer few new job opportunities, because they operate much as private schools, with a minimum of administrative employees. Still another criticism of the charter schools is that

they siphon badly needed public funds from the public school system—funds that might be used more efficiently and effectively improving education in existing facilities rather than starting a new and unproven type of school from scratch.

Apart from reduced job opportunities, charter schools have been an embarrassment to entrenched public school interests. By successfully absorbing high-risk, special education and, in some cases, gifted students, they have spotlighted the inadequacies of many public school systems, including the inability to provide students with adequate individual attention—along with the waste of public financial resources by huge, nonproductive and unnecessary, non-teaching school-district bureaucracies. Most charter schools offer a simple, back-to-basics curriculum that leaves students little choice but to focus on learning academic fundamentals.

Charter schools, however, have not been without financial problems. Indeed, California Charter Academy, which operated about 60 storefront charter schools for more than 12,000 students, shut its doors and declared bankruptcy in 2004, after only five years of operation and apparently gross financial mismanagement. Indeed, since the first charter school opened in 1992, about 350 charter schools, or nearly 10% of all the schools that have opened, have declared bankruptcy and closed. For that reason, many charter schools across the nation have turned to so-called charter management organizations (CMOs), non-profit management groups that oversee each school's administration, finances, personnel and educational delivery programs. Backed by such private foundations as the New Schools Venture Fund of San Francisco, and the BILL AND MELINDA GATES FOUNDATION, of Seattle, CMOs now serve 35 charter schools (28 in California), with 9,000 students. Like the charter schools they serve, however, CMOs have been the target of critics who claim the CMOs are simply sub-

stituting themselves for the nonproductive, nonteaching school-district bureaucracies charter schools were designed to eliminate.

Chautauqua Literary and Scientific Circle

An adult education program that grew into one of the most important educational movements in American history, with more than 1 million members and 15,000 local "circles" across the United States.

Founded in 1878, at Chautauqua Lake, New York, CLSC was a systematic program of "home reading" developed by JOHN HEYL VINCENT, a Methodist minister who had been a leading reformer of Sunday school curricula and teaching methods. Vincent described the programs as a "school at home, a school after school, a 'college for one's own house'" for a "company of pledged readers." Vincent and his associates originally formed CLSC to provide a somewhat informal mixture of lectures, concerts, courses and recreation on the lake shore. Its popularity spread so rapidly, however, that he systematized the program so that Americans everywhere could participate in their own communities. He founded the Chautauqua Press to provide required readings, and he developed a formal curriculum of courses that included nature studies, art, science, and secular and sacred literature. He designed it as "a college for one's own house . . . (for) those whose educational advantages have been limited, so as to secure to them the college student's general outlook upon the world and life. . . ."

The program required regular "study by textbooks"; the formation of "local circles for mutual help and encouragement in such studies"; attendance at "summer courses of lectures and 'students' sessions' at Chautauqua"; and "written reports and examinations." William Rainey Harper, later president of the University of Chicago, directed the Chautauqua summer school from 1883 to 1897, giving courses in

music, speech, physical education, domestic science, theater and theology. The curriculum expanded into a four-year program that included texts on American, English and Roman history, astronomy, human physiology, political science and economics, social problems, and even one entitled "Good Manners: A Few Hints about Behavior." Students also received the monthly Chautauquan magazine, which gave them study tips, texts of various study materials, questions for them to answer or discuss at their local study circles and news about other circles.

Those who finished the program successfully were awarded diplomas on "Recognition Day" each summer at the general assembly at Chautauqua Lake. A special correspondence course designed by Rainey was also available for those seeking bachelor's degrees. More than 8,000 men and women enrolled the first year, and 1,718 earned diplomas four years later. Annual enrollment reached nearly 200,000 in the early 1890s and more than 300,000 by the end of World War I. Circles attracted college graduates and professionals as well as many people who had never completed high school. Indian tribes formed their own circles, as did prisoners in penitentiaries. And small towns everywhere formed them—not only to educate themselves but to provide a welcome relief to the stifling church socials that often provided the only other source of adult social intercourse. Some circles drifted into specialized studies such as astronomy, while ethnic groups conducted circles in their native languages. Some shifted their emphasis to the teaching of practical trades and crafts, while others metamorphosed into civil organizations or women's or men's clubs. Many build their own libraries, and all tried to lure guest speakers.

During the 1880s, Chautauqua became a household word, as its summer sessions grew into a national forum that attracted such prominent speakers as Ulysses S. Grant, Alexander

Graham Bell, Jane Addams, John D. Rockefeller, Susan B. Anthony and Victor Herbert to lecture and discuss ideas in politics, economics, science, religion, social reform, literature and the arts. When Chautauqua Lake could no longer contain the crowds, 100 other sites sprang up across the United States. In the early 1900s, tent Chautauquas began touring the nation with their troupes of popular authors, explorers and political leaders.

The movement peaked in 1918 and began a slow decline as motion pictures, radio, book clubs and mass communications media made other forms of adult education more widely available. The original Chautauqua Lake facility, however, continues to draw nearly 10,000 residents to its nine-week summer programs. Called the Chautauqua Institute, the campus includes a Hall of Education, activities center, library, gymnasium, music studies center, art center, dormitories and alumni hall. About 300,000 attend performances of the institution's symphony orchestra, opera, drama and dance troupes, and more than 2,000 students enroll in summer courses in the arts, music, dance, theater and the humanities. Recreational facilities include a golf course, tennis courts, sports club and exercise classes.

cheerleading An organized student activity originally designed to rally vocal spectator support for secondary school and college sports teams. Originated in Britain during the 1860s, cheerleading had its origins in the United States at Princeton University, which formed the first "pep club," in 1865, and created the first known cheer:

*Tah rah rah;
Tiger, Tiger, Tiger;
Sis, Sis, Sis;
Boom, Boom, Boom;
Aaaahhhh!
Princeton! Princeton! Princeton!*

Organized cheerleading began in 1898 at the University of Minnesota, which hoped collective student cheering would spur its football team to victory over the heavily favored University of Wisconsin at Madison. It did not, but, by the 1920s, University of Minnesota cheerleaders were first in the nation to convert cheerleading into a sport by adding gymnastic and tumbling routines that made cheerleading more entertaining. Originally an all-male activity, it became virtually all-female during World War II. By the end of the 20th century, cheerleading had evolved into complex gymnastic performances, which, in turn, spawned state and nationwide competitions by cheerleading squads, with some squads training 11 months a year. As cheerleading evolved into an organized sport, however, interest waned in traditional cheerleading, aimed at encouraging spectator support of school teams. By the 1998–99 school year, the number of middle school and high school students participating in traditional cheerleading had dropped to 130,900—a 10% decline in only five years. In contrast, participation in competitive squads had more than doubled to almost 60,000.

Cheever, Ezekiel (1614–1708) The most renowned of the early colonial teachers and the first to make teaching a full-time job rather than part-time adjunct of ministerial duties. Born and educated in England, he originally came to the Massachusetts wilderness in 1637 "for the pure evangelical . . . worship of our Great Redeemer." A year later, however, he joined John Davenport and Theophilus Eaton in founding a colony in New Haven, where he established the first school and helped found and occasionally preached in the settlement's first church.

In 1650, he left New Haven to become headmaster at a grammar school in Ipswich, Massachusetts. During his 11 years there, he made Ipswich the most renowned school in

New England, drawing the finest scholars from New England as his students. Conflicts with town officials, however, forced him to leave, and, in 1671, he assumed the headmastership of the Boston Free School for the then-princely sum of 670 pounds a year. He remained there for 38 years, until his death at the age of 93. While there, he attracted some of the nation's top young scholars, including COTTON MATHER, whose elegy described Cheever's renowned school as a place where "We came to work, as if we came to play." Cheever's teaching methods were codified in *Cheever's Accidence*, a widely used textbook compiled by his grandson, who worked at the school during Cheever's last years.

chemistry education An outgrowth of ancient alchemy, chemistry entered modern school curricula in the 18th and early 19th centuries as part of the training required for medicine.

Two special-purpose institutions, however, pioneered its introduction into the standard secondary school and college curriculum: the UNITED STATES MILITARY ACADEMY at West Point and the RENSSELAER INSTITUTE (now Rensselaer Polytechnic Institute), which taught science and engineering technology. As the industrial revolution increased the importance of and interest in chemistry, liberal arts colleges turned to West Point and Rensselaer for model teaching programs in chemistry, physics, advanced mathematics and engineering, as well as laboratory instruction. In recent years, secondary school chemistry education has experienced several major revisions, including those of the Chemical Bond Approach Committee and those of the American Chemical Society in 1963.

Chicano education An ill-defined adaptation of the conventional American school curriculum to meet the needs of Spanish-Mexican

students and American students of Spanish-Mexican descent. (Chicano is derived from a dialectal pronunciation of the last three syllables of the word *Me-ji-ca-no*.)

Largely confined to schools in the U.S. Southwest, where the majority of Chicanos live, Chicano primary and secondary education may include bilingual instruction, a social studies curriculum specifically reflecting the history, cultural heritage and accomplishments of Chicanos and an arts curriculum emphasizing Chicano literature, music, art and dance. At the adult education level, Chicano educational programs may combine bilingual instruction with training in marketable skills or adult compendia of the standard American primary/secondary school educational program.

child abuse A catch-all crime defined in the U.S. Child Abuse Prevention and Treatment Act (1974) as "the physical or mental injury, sexual abuse, negligent treatment or maltreatment of a child under the age of eighteen by a person who is responsible for the child's welfare under circumstances which indicate that the child's health or welfare is harmed or threatened thereby." States, however, have widely differing definitions of child abuse, although all agree that it falls into two broad categories: Actual abuse, or injury inflicted to the child by others; and negligence, or failure by others to meet the child's needs. Depending on the state, abuse may be physical, sexual or verbal; negligence may be physical or emotional.

Since 1961, all states have enacted laws requiring physicians to report suspected cases of child abuse, and the majority of states require teachers to do the same. Teachers, however, have been reluctant to do so in states where laws fail to protect them from possible legal consequences of reporting suspected child abuse. Relatively untrained (in comparison, for example, to a registered nurse or a physician), teachers may be uncertain, in some cases, whether an

evident injury is indeed the result of abuse. An incorrect report can result in charges of slander. Even where abuse is responsible for a student's injury, the burden of proof would rest with the teacher in libel suits in many states.

In inner-city schools, some teachers ascribe their reluctance to report suspected child abuse to fears that a student's parents may retaliate violently—either against the teacher or the student. Although child abuse statistics are somewhat unreliable, the widespread belief that the incidence of child abuse was underreported and that child abusers were going unpunished led to a groundswell of public outrage in the mid-1970s.

In 1974, Congress responded by enacting the Child Abuse Prevention and Treatment Act. The act created a National Center on Child Abuse and Neglect to compile and conduct research on child abuse and neglect, to compile statistics on the incidence and severity of child abuse and to compile and publish training materials and serve as a clearinghouse for child abuse programs. The National Committee for the Prevention of Child Abuse and Neglect, in Chicago, collects similar data. In 2002, child protective services agencies of the various states reported a total of about 900,000 cases of substantiated and indicated child abuse; nearly 60% were the victims of neglect, 18.6% were victims of physical abuse, 10% were victims of sexual abuse, 6.5% were victims of emotional maltreatment, and 2% were victims of medical neglect. Some 16% of victims were infants one year old or younger, 24.3% were two to five, 23.2% six to nine, 21% 10 to 13 and 15.1% 14 to 17.

child advocates Organizations and individuals who legally represent or protect children against abuse, neglect or exploitation. Because minors have little or no legal status and, in many cases, no legal or constitutional rights, they must have adults to represent them

in legal proceedings. Advocates not only represent children in court; they may represent them in situations involving parents, teachers, employers or educational, governmental or other institutions. Advocates act in a wide variety of such situations as preventing child abuse, obtaining a child's rightful inheritance, protecting retarded or mentally ill children against institutional abuse, protecting the rights of dependent, neglected or delinquent children in the courts and assuring proper disposition of their cases by governmental agencies. Among the many organizations that serve as child advocates are the American Civil Liberties Union's Child Advocacy Project, the Juvenile Justice Project of the Center for Public Representation; the Child Health Advocacy Program of the Children's Hospital National Medical Center; and the Save the Children Federation.

child benefit theory A legal doctrine that emerged from a series of U.S. Supreme Court decisions in church-state conflicts. The cases all involved the spending of public funds to provide services to children enrolled in parochial schools. Although the Court has consistently ruled that government may not use public funds to support a religion or a religious school, under the child benefit principle, government may provide aid to children in religious schools if the aid only benefits the children and not the school or its religion.

As early as 1930, the Court ruled in *Cochrane v. Louisiana Board of Education* that a Louisiana school district had not violated the Constitution by purchasing textbooks for the teaching of secular subjects and lending them to students in parochial schools. The unanimous decision stated that the books were of benefit only to the students and not the parochial schools or the religions that they espoused. In 1947, the Court issues a similar ruling in *Everson v. Board of Education*, upholding a New Jersey law that reimbursed parents with state

funds for expenses of busing their children to private and religious schools, because the funds were spent directly on students and not on schools. Twenty years later, in *Board of Education of Central School District v. Allen*, the Court upheld a New York State law requiring local school boards to purchase textbooks and lend them free of charge to students in private and parochial schools. Citing *Everson* as precedent, the Court ruled that lending textbooks to students was a secular act that “neither advances nor inhibits religion,” because no funds were actually granted to the schools themselves.

child-centered education A theory of education that adapts the curriculum to the needs of the child rather than forcing the child to adapt and learn a prescribed curriculum. Originating in FRIEDRICH W. A. FROEBEL’s kindergarten movement of the 1870s, child-centered education was developed in the United States by G. STANLEY HALL, a pioneer in the experimental study of child development. Considered by many the “father” of both child psychology and educational psychology, Hall asked women’s clubs across the United States to enlist their members in a massive project to gather all imaginable data on the emotional, moral, physical and intellectual development of their children. The results were analyzed by teams of scientists he gathered at CLARK UNIVERSITY, which had opened in Worcester, Massachusetts, in 1889, as a graduate research university, with Hall as its first president.

The result was a new science of child development and a revolution in American education, based on Hall’s findings that children were not, as most parents and teachers had previously believed, miniature adults, carrying the original sins of Adam and Eve and bent on evil inspired by the devil. Children, he said, were entirely different beings, who reacted differently from adults to various stimuli. Their emotions—fear, anger, joy, and so on—were different

from those of adults as were their ideas of truth and falsehood and their ability to distinguish between imagination and reality.

Hall said parents and teachers were threatening the health of children by blocking their natural development with constraints, prohibitions, threats and punishment. “A pound of health, growth, and heredity,” he said, “is worth a ton of instruction. The guardians of the young should strive . . . to keep out of nature’s way, and to prevent harm, and should merit the proud title defenders of the happiness and rights of children.” Hall said childhood “comes fresh from the hand of God, is not corrupt . . . nothing else [is] so worthy of love, reverence, and service as the body and soul of a growing child.”

In effect, Hall told American parents to give children free rein to play at home and told teachers to abandon strict classroom formalities in favor of play-oriented teaching in which the curriculum was adjusted to children’s interests and needs. Hall called his new system of education “pedocentric,” as opposed to traditional scholastic education.

Hall’s new theory of education set off waves of educational reform that permanently changed American schools. Ardent believers in his theories introduced art, music and physical education in school curricula. Others formed public committees to build parks and playgrounds for children. And still others, including such philosopher-educators as JOHN DEWEY, used Hall’s ideas to develop new types of schools and new systems of pedagogy that would eventually become models for schools around the world.

child development The progressive changes in the physical, mental, emotional, functional and behavioral characteristics of children as they mature. Child development stretches through six life periods, beginning with the prenatal period, from conception to birth; the neonatal period, during the first month after

birth; infancy, from about four weeks to two years; preschool, from two to six years; middle childhood, from six to nine; and preadolescence, from nine to adolescence. Each of these periods sees significant changes in personality, self-perception, language skills, cognition and learning skills, peer and family relationships, relationships with adult authority, family influences and external cultural influences.

Child Find An annual census by states and local school districts to locate and evaluate handicapped children under 18, who are either

not being served or being served inadequately by their schools. Child Find was created under the provisions of the EDUCATION FOR ALL HANDICAPPED CHILDREN ACT OF 1975.

child labor The use of minors (in the United States, children under the age of 18) to perform adult work on farms and in factories and mines. Ironically, child labor has helped as well as hindered development of universal public education in the United States. Historically, child labor did not become a controversial social issue until the beginning the industrial revolu-



Children, ranging in age from five to 11, working a cotton field in Bells, Texas, in 1913. Children under 10 provided much of the manpower in southern tobacco and cotton fields. (Library of Congress, from Lewis Hine, *Photographs of Child Labor in the New South*)

tion in the late 18th century. After a spate of foreign wars produced a shortage of adult male labor in Britain, cotton mill owners rounded up orphans and children of indigent families and gave them free room and board in company-owned dormitories in exchange for their labor. Government authorities were delighted to get homeless children off the streets, and poor families were relieved of the burden of having to feed more children than they could afford. For the mills, introduction of child labor proved one of the most profitable innovations of the industrial revolution. Tens of thousands of children, some as young as five, worked up to 16 hours a day, with no out-of-pocket wage costs to the mills.

The practice spread to the American colonies, which also faced a shortage of adult male factory workers because of the need for farmhands to produce food and tobacco, the staples of the new nation's trade. At the time, most schools were reserved for the children of the landed gentry. Puritan America, then, gladly welcomed child labor as a legitimate way to keep idle children from falling prey to Satan's mischief. By the 1830s, however, an entire generation of child laborers had grown up illiterate. As the quality of goods they produced deteriorated and overseas sales of American goods declined, many of the very industrialists who had exploited child labor at the turn of the century joined social reformers, who wanted to end such exploitation, in demanding universal compulsory education to ensure that their future workers would be able to read, write and calculate.

Many of New England's most conservative industrialists offered political and financial support to liberal reformer HORACE MANN's efforts to establish compulsory, universal free education in Massachusetts. A state senator at the time, Mann not only created the nation's first public school system, he put teeth into the state's compulsory education law by winning

enactment of the first child labor law in the United States. The law prohibited employment of any child under 15 who had not attended school for at least three months during the previous twelve months. Pennsylvania was next to reform child labor practices with a law that set a minimum age of 12 for work in silk, cotton and woolen mills. By the beginning of the Civil War, a few other states had passed laws limiting working hours for children under 12 years old to 10 hours a day.

The end of the Civil War, however, created an unprecedented manpower shortage which combined with a vast industrial expansion to force 90% of all children between the ages of 12 and 18 into the factories, mines and fields. Where state laws required children to attend schools, factories set up makeshift classrooms in plants and required youngsters on afternoon shifts to report at 6 A.M. for six hours of classroom work before beginning their noon-to-six jobs on the factory floors. Children on the morning shifts did their classroom work in the afternoons.

By the 1890s, however, a small army of journalists, educators, settlement house workers and other social reformers cried out for an end to industry despoliation of the nation's children. They succeeded in winning congressional passage of a law in 1916, setting a national minimum age of 14 for workers in nonagricultural industries. In 1918, however, the U.S. Supreme Court ruled the law an unconstitutional infringement on personal liberties, namely, a child's right to work. An outraged Congress immediately passed another, similar law, but again, the Court overruled the legislation. In 1924, Congress tried bypassing the Court with a new constitutional amendment giving Congress "the right to limit, regulate and prohibit the labor of persons under eighteen years of age." Only 28 state legislatures approved the amendment, however—eight less than required—and the amendment died. In

1933, Congress again tried passing a child labor law, setting a minimum age of 16 for most workers and a minimum age of 18 for workers in hazardous industries. The Court declared this, too, unconstitutional.

By 1938, however, Democratic president Franklin D. Roosevelt had “packed” the Court with social progressives, and Congress passed the Fair Labor Standards Act, with age limitations similar to those in the 1933 legislation. In 1941, the Court declared constitutional the first national child labor law in the United States. Amended in 1949, the law limits the number of hours a child of 14 and 15 may work on school days and during vacations. It does not, however, protect children working on farms or employed as performers, newspaper sales boys or part-time workers at home.

Since then, most states have passed relatively strict labor laws that complement the federal law and usually prohibit employment of youngsters under 18 in hazardous work and minors under 16 in all factories. In general, such laws protect children’s right to an education by banning employment of children under 16 during school hours and for more than 40 hours a week during vacations. Most states also prohibit children from working at night, and all require permits as proof of age.

Neither the child labor nor the compulsory education laws, however, have eliminated child labor in the United States. An estimated 400,000 or more children of migrant workers who follow the planting and harvest seasons from state to state are exempt from child labor and compulsory education laws because they are not residents of any states. Many communities refused to admit nonresident children in local schools. Similarly, uncounted thousands of children of illegal aliens—likewise nonresidents—are also employed as child laborers and are unable to benefit from compulsory education laws.

Ironically, just as involuntary child labor produced generations of adult illiterates in the

19th century, voluntary child labor has interfered with the delivery of quality education to children in the late 20th and early 21st centuries. Almost 25% of all high school students hold full-time or part-time jobs during the school year, including 68% of high school seniors. Almost 2 million high school seniors work more than 20 hours a week. At least as many younger children also work long hours during the school year, and educators agree that after-school jobs are preventing many students from fulfilling important educational obligations, such as library research and homework. A 10-year study of 20,000 high school students in California and Wisconsin by Temple University psychologist Laurence Steinberg found that nearly one-third of those who had jobs were too tired to do their homework. Those who worked more than 20 hours a week earned lower grades and cut classes more often than their nonworking schoolmates.

Ironically, 75% of working high school students do so to earn spending money—about half to buy something expensive, according to the Massachusetts Occupational Health and Surveillance Program. Only 33% work to save for their future education, and only 23% work to help support their families. About 2% work to support themselves. Although federal and state laws limit the types of work adolescents can do, job injury rates for teenagers are the same as for adults, according to the National Institute for Occupational Safety and Health, which estimates that 70 youths are killed on the job each year and more than 210,000 injured.

Child Nutrition Act A 1966 federal law “to safeguard the health and welfare of the Nation’s children.” Extended and expanded in 1970 and 1977, the act provides federal funds to states to supply nutritional breakfasts and milk to economically deprived children in public and nonprofit schools and in preschools, day-care

centers, settlement houses, summer camps and other children's institutions.

child-referenced test A type of test that compares the child's knowledge after instruction to what the child knew before. The child-referenced test is one of three broad types of tests that include the NORM-REFERENCED and CRITERION-REFERENCED TESTS. The norm-referenced test compares the child's knowledge to that of other children, while the criterion-referenced test compares the child's knowledge to what the teacher or school expects him to know. Each type has its advantages and disadvantages. Proponents of child-referenced tests say they adapt the testing procedure to each child's abilities. Critics point out that it is largely used in inner-city schools, where schools can claim enormous student improvements each year, while their absolute achievement levels remain low in comparison to culturally advantaged students.

Children and Their Primary Schools (Plowdon Report) One of the most influential studies in the modern history of English education and of considerable influence on American public school education. Chaired by Lady Plowdon, the study was conducted in 1967 and the report that followed had 197 recommendations, including expansion of preschool education, introduction of multicultural and multilingual education for immigrant children and the development of middle schools to deal with the particular educational, developmental and emotional peculiarities of early adolescents.

Children's Aid Society An organization founded in 1853 by philanthropist Charles Loring Brace (1826–90) to provide homeless children in New York City with a lodging house and training in industrial skills. At the time, an estimated 10,000 homeless children roamed the streets of New York, many of them abandoned immigrant children who slept on steam

grates, under bridges or in garbage piles, and survived by selling newspapers, picking pockets or becoming prostitutes. Like similar organizations founded in the first half of the 19th century, the society's original mission expanded as flocks of abandoned or orphaned children appeared on its doorstep. Eventually, Brace created a network of lodging houses for boys and girls, with reading rooms and Sunday religious instruction. In addition, he set up a full-scale educational program of industrial schools and organized so-called orphan trains that carried some 100,000 abandoned children to live with families in rural areas of the nation—in some cases as cherished adoptive children but in others as exploited farm laborers. Like many other, similar organizations, the society was an outgrowth of the widespread evangelical movement that swept the United States between the end of the War of 1812 and the Civil War.

As missionaries combed the country for converts, their travels inevitably took them into city slums, where many remained to work with the unchurched poor. Out of that work sprang such organizations as the ORPHAN ASYLUM SOCIETY (1807), the NEW YORK SOCIETY FOR THE PREVENTION OF PAUPERISM (1816), the NEW YORK ASSOCIATION FOR IMPROVING THE CONDITION OF THE POOR and the Children's Aid Society. Today's Children's Aid Society provides a host of services that include adoption services and foster care, group homes, family counseling and sex and drug education. It operates a wide range of educational services, including Head Start facilities and a network of community and day-care centers, and it provides schools with social work and health services.

children's book clubs Membership organizations similar to adult book clubs but offering selected juvenile and young adult books to their members at prices below those of retail book stores. Children's book clubs have more than 20 million members to whom

they circulate monthly bulletins listing available books. Some clubs distribute directly to their members, while other clubs work exclusively through teachers or librarians, through whom children must place all their orders. As with adult clubs, there are two kinds of children's book clubs—hardcover clubs and paperback clubs.

Children's Book Council A New York City association of children's book publishers founded in 1945 to encourage interest in reading and enjoyment of children's books by distributing promotional materials such as posters and bookmarks to libraries and schools.

children's intelligence The ability of children to acquire and retain concrete and abstract knowledge and understanding to deal with new situations and acquire more knowledge. French psychologist ALFRED BINET was first to define children's intelligence in 1905, when the French government asked him and Theodore Simon to develop a test that would identify children too mentally retarded to benefit from normal school programs. The result was the first children's intelligence test, with a scale of 30 characteristics that distinguished between idiocy, imbecility and moronity.

Administered on an individual basis, the test was eventually adapted for use with all children and included verbal and pictorial problems and questions that measured vocabulary and understanding of social and other situations. In 1916 and again in 1937, LEWIS TERMAN revised the test to take age-associated child development into consideration. The result was the STANFORD-BINET INTELLIGENCE TEST and, subsequently, the Stanford-Binet Intelligence Scale, which can be administered to groups and yields scores representing the ratio of mental age to chronological age multiplied by 100—namely, the Intelligence Quotient, or I.Q.

children's literature A body of literature written expressly for children. Generally divided into *juvenile* books for elementary school children and *young adult* titles for middle school and high school students, children's literature usually falls into two classifications: trade books, sold through bookstores and designed for independent reading, and trade texts, with more carefully controlled vocabularies, sold to teachers and schools for use in classrooms.

Until the early 18th century, there was little literature specifically developed for children in the Western world, although a large body of entertaining oral literature had developed, based on folk tales, fables, legends, and so on. In England and the British Isles, these included the tales of Robin Hood, King Arthur, Jack the Giant Killer, Little Red Riding Hood and other popular stories. Those children who could read and attend school, however, studied only the Bible and other scriptural texts.

The invention of the printing press in the 15th century expanded the body of children's literature to include Sir Thomas Malory's *Le Morte d'Arthur* and Aesop's *Fables*, but most literature written for children consisted of serious works such as the *Book of Curtesye*, published in 1477 by the first English printer, William Caxton.

Little changed in the American colonies. The widely used *NEW ENGLAND PRIMER*, printed in Boston in 1690, for example, contained a rhymed alphabet, tables of syllables, the Lord's Prayer, the Apostles' Creed, the Ten Commandments, methods to prepare for death and departure into the next world, and a graphic description of the burning of a Protestant martyr at the stake.

The Czech-Protestant educational reformer JOHN AMOS COMENIUS may have been responsible for the first children's picture book, which he issued in Latin in 1658. It appeared in English in England and in the colonies a year later. In 1697, Charles Perrault published the first book specifically designed to amuse chil-

dren—a collection of traditional French folk tales, *Histoires ou contes du temps passé*. Better known as *Comtes de ma mere l'Oie*, it was translated into the *Tales of Mother Goose*, which included "Sleeping Beauty," "Cinderella," "Red Riding Hood" and "Bluebeard." Mother Goose provided the impetus for other writers to create more amusing children's literature. Among the most notable were Germany's Wilhelm Carl and Jacob Ludwig Carl Grimm, whose *Grimm's Fairy Tales* ("Hansel and Gretel," "Snow White and the Seven Dwarfs," "Rapunzel," etc.) were published between 1812 and 1815, and Denmark's Hans Christian Andersen, whose *Fairy Tales, Told for Children* ("The Princess and the Pea," "The Ugly Duckling," etc.) were published variously from 1835 to 1861.

English publisher John Newbery (1713–1867) was the first publisher in the English-speaking world to devote a significant portion of his production to children's books, printing attractive, inexpensive books with stories, puzzles, riddles and some lessons. The AMERICAN LIBRARY ASSOCIATION still honors Newbery by awarding its annual Newbery Medal to each year's outstanding new children's book.

With universal public education, children's book publishing mushroomed into the huge industry it remains today, with thousands of new titles published each year. In 1945, an association of American publishers of children's and young adult trade books formed the Children's Book Council to encourage children to read independently, outside of school, and to promote adult understanding of children's literature.

Despite the Book Council's continuing efforts and a steady increase in the juvenile population of reading age, sales of juvenile literature have declined steadily in the face of competition from other media such as television, electronic listening devices for popular music, computer games and other electronic entertainment. Although the juvenile popula-

tion of reading age increased nearly 10% from 2000 to 2005, juvenile book sales declined more than 11%, despite the phenomenal success of specific titles such as the Harry Potter and Lemony Snicket books. Although both series experienced huge worldwide sales, their popularity in the United States—like that of many juvenile titles—was largely limited to the most literate children, largely from families in middle, upper-middle and upper economic groups. Much of the increase in the juvenile population resulted from a surge in immigration by largely poor families whose children lack reading skills. By 2006 the U.S. Office of Immigration estimated the number of illegal immigrants in the United States at more than 11 million, including about 1.5 million school-age children. By mid-2006 about 49% of all American high school seniors were unable to read at the level required by college freshman texts, according to the ACT ASSESSMENT PROGRAM—a condition not likely to bolster book sales at any level.

Still another factor in the decline in consumption of children's literature has been a sharp fall-off in demand for nonfiction books. New teaching methods in primary and secondary schools have substituted selections and readings for complete books in social studies, history, the sciences and other academic areas. The practice has seriously reduced the demand for nonfiction books in the juvenile market.

Children's Literature Center The Library of Congress collection of children's books and other materials relating to children. The library began receiving children's literature in 1870 as copyright deposits, but it didn't gather them together in a special collection until the 1970s, after the AMERICAN ASSOCIATION OF UNIVERSITY WOMEN and the Association for Childhood Education International lobbied for the establishment of a special Children's Literature Center.

children's organizations Voluntary fraternal and sororal organizations founded largely in the late 19th and early 20th centuries to supplement the work of schools in shaping the characters of American youngsters. Among the most notable were the YMCA (1851), YWCA (1866), the Playground Association of America (1906), Boys' Clubs of America (1906), the Boy Scouts of America (1910), the Camp Fire Girls (1912) and the Girl Scouts (1912). Various founded by progressive educators, social reformers and missionaries, all had as their primary purpose the channeling of youthful energies in socially desirable directions.

At the time, American city streets were swarming with homeless children, some abandoned by parents who could no longer afford their care, others dismissed from jobs because of crippling injuries that made them useless, and still others simply orphaned and on their own. New York City alone had an estimated 100,000 street urchins who slept in doorways, discarded boxes or barrels and survived by begging or engaging in thievery or prostitution.

The Playground Association of America launched a national campaign to provide free playgrounds for city children. The Boy Scouts, Girl Scouts and YMCA and YWCA opened summer camps to provide summer vacations in the fresh country air for slum children. The thrust of the Boys' Clubs in the cities and Boy Scouts in the country was to convert adolescent "gang instincts" into activities that combined education and recreation.

The YMCA had been founded in 1844 and introduced in the United States in 1851 as an evangelical missionary society for young men. The YWCA was founded in 1866 to provide improved living conditions for young working women by providing boardinghouses for them. But the plight of America's homeless children forced both organizations to become educative and social service organizations in the 1890s, as children began showing up at lecture series

for adults to warm themselves and, as often as not, to curl up asleep in hidden corners.

By the end of that decade, big city "Ys" were routinely holding elementary school classes for youngsters who had left school to take full-time jobs. Their activities expanded to include counseling, guidance and vocational education. Later, they opened summer camps and vacation schools where children could escape the city slums and combine study with recreation. By 1913, there were more than 70,000 students enrolled at the Y, studying courses ranging from accounting to wire telegraphy.

As universal public education took hold after World War I and more states enforced child labor laws, the educative roles of children's organizations shrank substantially. By the end of World War II, public schools had wrested formal education out of the hands of most children's organizations, although all continue to offer camping and recreational opportunities for children, while the Ys continue to offer informal courses and cultural enrichment opportunities for both children and adults.

See the index for articles on individual children's organizations.

children's rights The privileges, protection and other entitlements granted to children under the law. Because of their status as dependents, minors traditionally have had few, if any, legal "rights." The U.S. Constitution granted them none, and they remained chattel throughout most of the 19th century, with indigent parents able to sell them virtually at will in many areas of the United States. Children's rights remain a morass of conflicting federal, state and local statutes and court decisions. One Florida state judge, for example, gave an adolescent boy the right to "divorce" his natural parents in 1992 so that he could be adopted by foster parents.

On the other hand, federal courts, including the U.S. Supreme Court, have consistently

ruled that minors do not have unrestricted rights to free speech in school and that school authorities can impose a wide variety of requirements and restrictions on student behavior. Schools can bar pregnant girls from some school activities in some states. They can impose dress and grooming codes and require students to serve as volunteers in community service programs as a requirement for graduation. School authorities can also censor what students write in school publications.

Public school authorities cannot, however, totally ignore the Constitution. They cannot deny students Fourteenth Amendment rights to "due process," for example, or force children to engage in any religious activities. The courts have ruled, in other words, not that minor students have constitutional rights, but that school authorities must obey constitutional restrictions on themselves as government agents.

Almost all the states have granted children certain universal rights. They are guaranteed the right, for example, to protection against abuse of any kind and neglect—even by their own parents. Most states and the federal government have passed laws to provide children with food, to prevent hunger and malnutrition, and medicines and sera to prevent disease. Most states and, again, the federal government provide handicapped children the right to attend school and to gain access to all other public facilities. Children, however, cannot usually demand their rights or obtain their just due on their own. As dependents, they do not have the "right" to represent themselves and are, therefore, forced to rely on appropriate adult, children's advocates to obtain protection or privileges due them under the law.

Children's Television Workshop A television production company of the 1960s, now known as Sesame Workshop and owned by Time Inc., and 1970s that produced the first educational television programs for children.

Founded by broadcast journalist Joan Ganz Cooney and Lloyd N. Morrisett of the Carnegie Corporation of New York, the workshop produced three of the most important and influential educational programs for children ever aired: *SESAME STREET*, *The Electric Company* and *Feeling Good*.

Financed by the CARNEGIE CORPORATION OF NEW YORK, the FORD FOUNDATION and the federal government, the three programs were the first to incorporate the school curriculum into entertainment broadcasting. They succeeded in luring millions of children away from commercial television programs, which, at the time, were targets of criticism for enveloping young viewers with violence and erotica.

Sesame Street was the first workshop production to be aired. Designed for preschoolers, it first appeared in 1969 on the then-new network of the CORPORATION FOR PUBLIC BROADCASTING and made reading exercises sound like television commercials that youngsters of that age loved imitating. Indeed, a typical show might have announced, "This edition of Sesame Street has been brought to you by the letters C and O and by the number 3."

Sesame Street's inventive, socially conscious producers believed firmly in the theory that more than half the lifetime intellectual skills are formed by the age of five, and they made special efforts to appeal to socially and educationally deprived preschoolers without preschool education and, therefore, with limited development of school-related skills. Although middle- and upper-income children also grew addicted to *Sesame Street*, the program reached 90% of inner-city children and, according to schools in those neighborhoods, produced remarkable results in improving reading readiness of deprived children. *Sesame Street* lessons were delivered by showing, not lecturing, and the various puppets and children who mixed easily on the show represented all colors of the rainbow.

In 1971, the workshop produced *The Electric Company* to teach and improve reading techniques of slightly older children. In 1974, the workshop brought health education to teenagers via its program *Feeling Good*.

child study movement A massive effort by educators and psychologists who in the 1890s began to document all elements of CHILD DEVELOPMENT. CLARK UNIVERSITY psychologist and founding president G. STANLEY HALL originated the child study movement in 1897, when he enlisted women's clubs across the United States in gathering data about every element of their children's moral, intellectual and emotional development. His goal was to develop a science of child development and, in turn, a science of education that mothers and teachers alike could use to ensure the proper upbringing of American children. His colleagues at Clark University examined every aspect of children's development—from the roots of loyalty, lying and sexual behavior, to fluctuating interests in literature, history, geography and arithmetic. Their conclusions produced a revolution in the way parents raised their children and the way they and their children's teachers approached education.

Young children, Hall's studies found, were fundamentally and *naturally* different from adults, with different ideas about truth and untruth and an inability to distinguish clearly between imagination and reality. Rather than interfere with what Hall called natural development—by punishment, constraints and prohibitions—parents and teachers should limit their interference in children's development to protecting them from harm. Parents were urged to love, nurture and encourage children's natural propensities and give them free rein rather than forcing them to meet adult standards which they were not capable of understanding. Children were born innocent little animals, "in the hand of God," said Hall. They were not evil or

corrupted by original sin, as many Protestant church leaders had contended for centuries.

Hall urged schools to establish more kindergartens and teachers to extend the informality of kindergarten into the elementary grades. He urged reformulation of elementary school curricula to meet the needs, interests and developmental patterns of children—to make schools *pedocentric* rather than *scholastic*, as they had been for centuries. As the child study movement gained momentum, it produced untold numbers of pamphlets and books designed to educate mothers and teachers on proper methods of caring for, raising and educating children.

Child Welfare League of America A child advocacy organization that sets standards for and accredits a wide range of child care facilities and agencies, including child protective services and adoption and child-placement services. Formed in 1920, the league also sponsors research on child care, child welfare and foster care.

choral speaking A pedagogical technique to help youngsters of any age learn to appreciate and enjoy poetry, free verse and dramatic prose. Choral speaking may be formal or informal. Students engage in informal choral speaking each morning when they recite the Pledge of Allegiance. Formal choral speaking, however, requires almost all of the same techniques used for choral singing, with voices grouped by pitch and assigned different parts. As with choral singing, formal choral speaking requires a choral director to direct the tempi and sonorities. Choral speaking has also been used to good effect in teaching adults ENGLISH AS A SECOND LANGUAGE (ESL) to convey intonation patterns and speech rhythms.

Christian schools Private, fundamentalist Protestant, or evangelical, schools that are usu-

ally members of one of four associations: the American Association of Christian Schools, National Association of Christian Schools, Association of Christian Schools International or Christian Schools International. In 2000, there were an estimated 10,000 such schools claiming a combined enrollment of about 825,000 children. The vast majority of the schools were less than 25 years old and the result of a resurgence in Christian fundamentalism in the United States.

The term *Christian school* is, however, confusing. Just as the word *Christian*, by itself, has several meanings, so does the term *Christian school*. In the universal sense, a Christian is a follower or believer in Christ, but in the United States, a Christian may also be a member of either of two specific sects: the Christian Church (Disciples of Christ) or the Christian Churches and Churches of Christ, the latter a fundamentalist group that separated from the former in 1906. Both groups operate “Christian schools,” and the Christian Church (Disciples of Christ) operates two colleges. Christian schools may, therefore, refer to schools operated by these two sects or, more universally, to religiously oriented schools offering some religious education. Unlike the term *Christian*, which includes Roman Catholics, the term *Christian school* does not include Roman Catholic schools. Christian schools are always schools affiliated with Protestant denominations. Those identifying themselves as conservative are often associated with evangelical Christian sects but may include schools associated with Southern Baptists, Pentecostals and even nondenominational Christian groups. All require the teaching of CREATIONISM in their history and science courses—that is, that God created the world in six days. Although some discuss and even teach the theory of EVOLUTION, conservative Christian schools emphasize its contradictions of what they consider to be biblical truths about creation.

The term *Christian school*, however, may also refer to one of the many all-white private Christian academies—mostly in the South—that opened in the 1970s and 1980s for white families to evade federal laws and court rulings that desegregated public schools.

church Usually, the religious organizations made up of believers in Christ, but used in a more general sense in the secular United States to mean all organizations whose members engage in religious worship.

Throughout the history of the New World, the church has been central to education, and while the Declaration of Independence severed the ties of American colonists to England, it did little to sever their ties to the churches their English forbears had founded in the colonies. After the Revolutionary War, all 13 states continued the colonial practice of maintaining official religions, and they routinely tailored their laws to conform to church laws. In 1783, however, seven states responded to demands from members of other Christian sects for greater religious freedom by disestablishing the church. In 1786, Virginia followed suit, and, in 1791, the federal Constitution was amended to prevent Congress from making any laws “respecting an establishment of religion. . . .” Connecticut, however, waited until 1818 to sever its ties to the state religion, and Massachusetts became the last state to do so in 1833.

In the absence of state-operated schools, however, the church remained responsible for virtually all formal education in the United States. The U.S. Constitution made no mention of education and, by default, the federal government and, in turn, the individual states often left questions of education to local communities and the parents therein. In the early United States, the central institution in most communities was the church, whose minister, more often than not, was also one of the few college-educated men. Trained to instruct their

congregations in the beliefs and rites of their church, clerics were teachers as well as ministers. It was natural for them to assume the role of secular as well as spiritual teachers in most communities—if for no other reason than to insure the ability of children to read and learn the key tenets of the church.

It was not until the mid- to late 19th century that secular public schools began competing with churches as providers of education. Although secular public schools filled the educational needs of American-born children, they often proved inadequate for many children of semiliterate, non-English-speaking immigrants arriving from Europe.

To fill those needs, many Catholic churches and Jewish synagogues converted their religious schools into ethnoreligious, bilingual institutions that not only provided education, but a wide range of social services that had never before been available in the United States: child care services for working parents, nursery schools, food baskets for the hungry and the ill and all the other “welfare” functions that government would assume in the mid-20th century.

By the end of World War I, as government replaced the church as the primary provider of education, the number of children attending church schools began declining, and with that decline came a subsequent decline in church membership. To reverse the trend, many churches moved into political activities that not only bonded church members in common causes, but taught them the working of the American political system. In the 1920s, many Protestants found common cause in supporting and obtaining passage of the Eighteenth Amendment to the Constitution banning the manufacture or sale of intoxicating liquors. In the 1950s and 1960s, many churches supported the movement for civil rights and racial desegregation. In the 1970s and 1980s, other churches went to battle over such questions as nuclear disarmament,

world peace, legalized abortion, prayer in public schools, and many other issues.

In addition to political and social activities, many churches and religious institutions held their congregations together by expanding into educative social activities, such as lectures, adult education, men’s, women’s, parents’, singles’, senior citizens’, boys’ and girls’ clubs. Many offered retreats and summer camps, travel opportunities, concerts, plays, movies and other entertaining programs. Some religious organizations broadcast services over radio and on television to a larger pool of potential members.

The net effect on American life has been to make the church an integral part of daily life. For more than a century, more than 60% of Americans have remained members of churches, synagogues and other religious organizations. Those ties have made it difficult for many Americans to understand and, indeed, adhere to constitutional separation of church and state—especially when that separation affects education, with which the church has always been so closely tied.

Church of England The third of the Protestant churches to emerge during the Reformation, after Lutheranism and Calvinism. Originally Roman Catholic, England first broke with the papacy in 1534, after Pope Clement VII refused to annul the marriage of Henry VIII to Catherine of Aragon. Asserting the right of a Christian prince to control church affairs in his domain, Henry forced Parliament to pass the Act of Supremacy, which made the king supreme in matters spiritual as well as temporal and stripped the pope of his control over the church in England.

English translations of the Bible followed, and in 1549, the clergy published the first English *BOOK OF COMMON PRAYER* containing the rites of the church. After Elizabeth I succeeded to the throne in 1558, Parliament approved a

new Act of Supremacy, reasserting the supremacy of the English Crown over the church, and an Act of Uniformity requiring the use of the English-language *Book of Common Prayer* in all English churches. As a university degree became a prerequisite for obtaining a license to preach, better, more broadly educated men ascended church pulpits in England and, because of their education, extended their priestly duties into teaching. The Anglican Church of Christ became the “school of Christ,” to cite English minister Hugh Latimer. They continued those duties in the American wilderness when they arrived with the first settlers in Virginia and New England.

Although the early American colonies included French and Spanish Catholics, Swedish Lutherans, Dutch and Scottish Calvinists, French Huguenots and Spanish Jews, the English Protestants made up the majority of settlers and both their language and their religion predominated. Intent on maintaining that predominance, England sent an army of soldiers, persuasive politicians and religious missionaries to assure colonist loyalty to the mother country and the mother church.

The number of missionary minister-teachers grew from no more than 40 in the early colonial days to several hundred a century later. In New England, many churches had both a minister to preach and a lay instructor to teach children the Scriptures. Virginia law required the minister to do both and, indeed, “upon every Sunday . . . shall half an hour or more before evening prayer examine, catechize, and instruct the youth and ignorant persons of his parish. . . .”

As the Age of Reason swept across western Europe and England, Anglican ministers expanded their readings to include philosophy, sciences, mathematics, foreign languages and other subjects that reached beyond the spiritual. They added these to the curricula they taught in church schools and in an ever grow-

ing network of private academies and colleges they had founded.

A combination of factors in the mid-18th century, however, began to weaken the hold of the Church of England on the minds and hearts of many colonists—just as those same factors eroded colonist loyalty to the Crown. For one thing, many non-Anglicans of non-English blood set up their own churches and church schools to educate their young. For another, the sheer isolation of many communities kept them out of touch with the orthodox ideas of central church and political authorities in such cities as Boston. Over the years, life in the wilderness reshaped those ideas into religious and secular teachings that were no longer in accord with the mother church.

In addition, the Age of Reason itself was producing new liberal philosophies that changed the thinking and religious beliefs of many New World Anglicans. Coupled with the informal, egalitarian way of life in the colonies, the new philosophies not only produced new religions, they eventually produced a new nation, free of the notions of divine rights of kings and predestined social status.

With political independence, Americans in Anglican congregations broke their ties to the Church of England, which required prelates to swear allegiance to the British crown. After changing the name of their religion at first to Protestant Episcopal, they petitioned the Archbishop of Canterbury to obtain permission from Parliament to consecrate American bishops. Early in 1787, Parliament acceded, and the bishops of the Church of England began consecrating the first bishops of the Episcopal Church in America. Two years later, all congregations sent delegates to the first general convention in Philadelphia and formally organized the Episcopal Church. Although the Church of England declined in religious importance in the United States, the educational traditions it established have

remained a permanent fixture of American society.

church-related schools Educational institutions that integrate religious instruction into their curricula and are operated either directly by religious authorities or lay authorities associated with a religious sect. More than 19,000 of the nearly 28,000 private schools in the United States are church related. Until the public school movement got under way in the mid-1830s, virtually all schools in the United States and, before that, in the American colonies, were church related. Even the most secular institutions included prayer and instruction in the Scriptures in their daily routine. The early private academies were all church related.

Although the first public schools had no official ties to any church, they displayed a distinct Protestant bias in the daily prayers and, as often as not, the biblical studies they required. As waves of non-Protestant, European immigrants arrived in the United States, many rebelled against the Protestant bias in public school education. Catholics were the first. In 1884, the Third Plenary Council of Baltimore issued a decree establishing a system of CATHOLIC SCHOOLS to educate children of Catholics from primary school through university. Catholic schools remain the largest group of church-related schools in the United States, with about 8,250 primary and secondary schools, compared to about 13,000 for all other religions combined.

As the number of Catholic immigrants swelled in the 1880s, so did the number of Jews. Most of them also refused to abandon their ethnoreligious heritage to the protestantized Americanization process of public schools. Instead, they established TALMUD TORAH SCHOOLS and YESHIVAS that combined Hebrew studies and religious education with the academics taught in public schools.

Public schools, meanwhile, responded to complaints of religious bias toward immigrant

children by secularizing their curricula. Although they succeeded in luring more children of the foreign born, they drove away some American Protestants. By the turn of the 20th century, many Protestant sects had established their own church-related schools. The wealthiest families sent their children to elite Protestant boarding schools in New England—many of them successor institutions of the colonial-era academies. As the number of religious schools expanded, supporters of compulsory public schooling laws challenged the right of church-related schools to exist. In 1922, Oregon passed a law requiring all children between the ages of eight and 16 to attend secular public schools. In 1925, however, the U.S. Supreme Court declared the law unconstitutional in the case of *PIERCE V. SOCIETY OF SISTERS* and opened the way for a vast expansion in the number of parochial schools.

Although that growth slowed during World War II, it accelerated in the 1960s and 1970s, when a wave of Protestant fundamentalist fervor set off attempts to reintroduce prayer and religious studies into public schools. After the U.S. Supreme Court issued a series of definitive rulings barring all religious studies and practices from public schools, fundamentalists responded by establishing new church-related christian schools. Of America's more than 54,600 elementary and secondary schools, more than 21,300, or 39%, are church-related schools—more than 8,000 of them Catholic. About 60%—more than 16,500—are elementary schools. About 8.2% of American elementary and secondary school children—about 4.35 million—attend religious schools.

(See also PAROCHIAL SCHOOLS.)

church-state conflicts In education, those conflicts centering over government prohibition against the teaching or practice of any religion in publicly funded educational institutions. Few, if any, church-state conflicts affected edu-

cation during the colonial era or even during the first 80 years of American independence, when local churches and their parishioners controlled most education. Even the enactment of the Bill of Rights produced little conflict between church and state in education. Although the First Amendment's ESTABLISHMENT CLAUSE prohibited Congress from passing any law "respecting an establishment of religion, or prohibiting the free exercise thereof . . .," it did not prohibit states from doing so. Indeed, Massachusetts did not sever its official ties to the church until 1833, and churches remained the only schools in most American communities.

In the 1830s and 1840s, Massachusetts, Connecticut, Rhode Island and New York established the first public school systems funded with public monies. Most routinely incorporated Protestant religious instruction as part of their day-to-day curricula until 1868, when passage of the Fourteenth Amendment to the Constitution extended federal restrictions to state governments and in effect barred them from imposing a religion on citizens. Nevertheless, Protestant church doctrines and rites, ranging from the singing of Christmas carols to actual teaching of Christian Scriptures, remained an integral part of education in the vast majority of American public schools. As waves of non-Protestant immigrants arrived, their children either accepted such education or transferred to schools founded by their own churches and sects.

The explosive growth of sectarian schools and the siphoning of non-Protestants from public schools created more church-state conflicts. In 1922, Oregon passed a law requiring all children between the ages of eight and 16 to attend public schools. In 1925, however, the U.S. Supreme Court declared the law unconstitutional in the case of *PIERCE V. SOCIETY OF SISTERS*, and opened the way for a vast expansion in the number of parochial schools. Mean-

while, church-state conflicts expanded in a new direction in the South during a surge of Protestant evangelical fervor. Outspoken evangelists demanded that the teaching of evolution be banned in public schools and colleges. Bitter political battles erupted in Kentucky, North Carolina, Texas, Oklahoma, Florida and Tennessee. The fundamentalists lost in the first three states, but Oklahoma outlawed the public school use of books with Darwin's theory of EVOLUTION. Florida made it "improper and subversive" for public school teachers to teach atheism, agnosticism, Darwinism, or "any other hypothesis linking man in blood relationship to other forms of life." In 1925, Tennessee passed the Butler Bill, making it a crime for teachers in public schools and colleges "to teach any theory that denies the story of the Divine Creation of man as taught in the Bible, and to teach instead that man has descended from a lower order of animals." When Dayton, Tenn., science teacher John Thomas Scopes used a textbook that explained the theory of evolution, he was arrested, tried and convicted in the most celebrated church-state conflict ever to affect American public school education. The SCOPES MONKEY TRIAL, however, made American Protestant fundamentalism—and, indeed, American rural public schools—the target of worldwide mockery. The movement to ban the teaching of evolution seemed to die, but the conflict behind the movement did not. At the heart of the conflict was the question of parents' rights to prevent schools they support with their taxes from teaching their children facts that conflict with their religious beliefs. The conflict flared up again after World War II, as another wave of evangelistic fervor swept the United States. As fundamentalists gained control of school boards and state legislatures, schools once again introduced religious instruction and prayer into the school curriculum. As it had in the *Scopes* trial, the American Civil Liberties Union led the legal opposition to

force state and local governments to abide by First Amendment restrictions against state imposition of religion. In a landmark reaffirmation of the First Amendment in 1962, the U.S. Supreme Court ruled in the case of *ENGEL V. VITALE* that New York State had violated the Establishment Clause of the First Amendment by giving public school officials the option to mandate a daily prayer in school. In the subsequent case of *SCHOOL DISTRICT OF ABINGTON TOWNSHIP V. SCHEMPP* the following year, the Court reaffirmed *Engel* in ruling that the Abington (Pennsylvania) School District had violated the First Amendment by allowing prayers and Bible readings in public schools—even when it excused unwilling students from such activities.

Meanwhile Louisiana passed a law that entitled the Louisiana Balanced Treatment for Creation-Science and Evolution-Science in Public Instruction, which prohibited the teaching of the theory of evolution in public schools unless “CREATION SCIENCE” was taught at the same time. In 1987, in the case of *EDWARDS V. AGUILLARD*, the Court struck down the Louisiana law as a violation of the First Amendment. The Court said that the law had been designed to discourage the teaching of accepted scientific theories while promoting a specific religious belief.

Many state education boards have not ceased trying to bypass the Court’s rulings, however. Although it reversed its decision in 2001, the Kansas Board of Education ordered schools to delete all mention of evolution in science curricula in 1999. Kentucky ordered schools to delete the word *evolution* in favor of the phrase *change over time*, and Oklahoma officials ordered all science textbooks to carry a disclaimer about the certainty of evolution. In addition to officially mandated changes in the curriculum, a growing number of teachers committed to “the inerrant word of God” have organized so-called creation clubs in several hundred public schools across the nation. The creationist

thrust, however, is not without stiff opposition. The National Science Teachers Association, with 53,000 member-teachers, and the National Center for Science Education, with 4,000 members, continually sponsor seminars to prepare teachers to lead their communities in defending evolutionary theory as essential to proper science education. New Mexico’s Board of Education responded to these efforts late in 1999 by barring creationism from the public school science curriculum and overwhelmingly endorsing the teaching of evolution theory.

Undeterred, Christian fundamentalists re-packaged creationism into what they dubbed INTELLIGENT DESIGN—and again placed the teaching of evolution in jeopardy in many areas. A theory that an as-yet-unidentified guiding force directed the development of all living organisms—including humans—intelligent design was developed as an alternative to Charles Darwin’s theory of evolution. Intelligent design proponents claim that living organisms are too complex to have evolved from common ancestors through natural selection and random mutation. Underlying the argument for intelligent design is the concept of “irreducible complexity,” which holds that the interdependent parts of most organisms make it impossible for them to have existed in any other earlier, more primitive form. Unlike creation science, or creationism, the theory of intelligent design carefully avoids all references to religious beliefs, which, by injunction of the United States Supreme Court, the public schools are prohibited from teaching or disseminating. Nonetheless, a Federal District Court in Harrisburg, Pennsylvania, ruled in December 2005 that intelligent design was as much a religious viewpoint as creationism and that public schools injecting it into the science curriculum were in violation of the First Amendment of the Constitution.

As controversial as the evolution question has been the question of PRAYER IN SCHOOL. The U.S. Supreme Court declared prayer in public

schools unconstitutional in its 1963 decision in the case of *School District of Abington Township v. Schempp*. Tennessee, Alabama, Oklahoma and many other states, however, subsequently enacted laws that bypassed the Supreme Court ban on teacher-led or school-directed prayer by permitting student-led, nonsectarian, nonproselytizing, noncompulsory prayers on public school grounds at noncompulsory student assemblies, sporting events and graduations. The issue has yet to be fully resolved. The federal courts have upheld student rights to pray independently of school authorities. Aside from banning prayer and religious instruction in public schools, the Supreme Court has also consistently ruled that government may not provide tax-funded materials or services to religious schools or do anything that might promote any religion.

Although the Supreme Court has remained firm in banning prayer and religious instruction in public schools, it has been less zealous in guarding against the use of public funds to support secular education in religious schools (a) when nonreligious schools routinely receive such funding and (b) if the funds are not paid directly to any religious organization. As early as 1947, the Supreme Court ruled in *EVERSON v. BOARD OF EDUCATION* that the state of New Jersey could reimburse parents for the cost of transporting students to and from religious schools. Such benefits, said the Court, merely duplicated benefits already provided to parents of public school students and was of no direct benefit to any religious organization. In *Committee for Public Education v. Nyquist* in 1973, however, the Court struck down a New York State law providing a tax deduction for tuition paid to private schools. The Court ruled that the law had not been neutral and provided parents of students attending religious schools a benefit not available to parents of public school students. Ten years later, on the other hand, the Court's ruling in *Mueller v. Allen* upheld a

Minnesota tax deduction for *expenses* incurred at any school—public or private, including religious—for textbooks and other strictly secular teaching materials that the local school district would normally provide free of charge to students in public schools. In 1996, the Court went a step further, ruling in *Agostini v. Felton* that it was constitutional for public school districts to send teachers to parochial schools to teach federally financed classes.

(See also *MEEK v. PITTINGER*; *MITCHELL v. HELMS*; *WOLMAN v. WALTER*.)

citizenship education The study of the rights and responsibilities of United States citizens and the mechanics of government. Once incorporated in required secondary school civics courses, citizenship education was gradually absorbed by social studies courses. Citizenship education began to reemerge as a separate topic following national surveys in the 1970s and 1980s that showed the majority of American school children to be ignorant about government operations.

City University of New York The public system of higher education operated by the City of New York in the city's five boroughs. Made up of 20 campuses, CUNY includes 11 four-year colleges, six community colleges, a graduate school, a law school and a school of biomedical education, with a faculty of 6,000 offering more than 1,400 academic programs to 450,000 students.

The oldest of the university's campuses are City, Hunter, Brooklyn and Queens Colleges. City College was founded in Manhattan in 1847 as the Free Academy to give free higher education to New York's poor but intellectually gifted men, especially the sons of immigrants. Once called the "Harvard of the Poor," the Free Academy produced eight Nobel laureates, two Pulitzer Prize winners and scores of leaders of local, regional, national and international renown—

among them U.S. Supreme Court justice Felix Frankfurter, labor leader A. Philip Randolph and Secretary of State General Colin L. Powell.

Ironically, New York City had no free public schools until 1897, 50 years after the founding of the Free Academy. Therefore, the Academy had to compensate for the lack of free secondary school education by offering a five-year program, with the first year a “subfreshman” curriculum of preparatory studies for academically gifted graduates of the eight-year common school program that constituted the only lower level education then available in New York.

Hunter was founded in 1870 as the Normal College of the City of New York to train young women as teachers. Brooklyn College was founded in 1930 and Queens College in 1937 to fulfill the same roles in those boroughs that City College did in Manhattan. Since then, the university has added colleges in other boroughs, as well as a bilingual college for Hispanic students and colleges specializing in business, criminal justice and other professional areas.

The Free Academy adopted the name City College in 1866, but remained a free institution, even giving its students free textbooks, until New York City’s 1976 budget crisis, when it imposed a nominal annual tuition of several hundred dollars. It remains, however, an educational haven, where New York’s poor can obtain an education at costs far below those of other public colleges in the United States. More than 10% of the student body are economically disadvantaged. Between World Wars I and II, Hunter, Brooklyn and Queens Colleges joined with Manhattan’s City College to form the city’s public system of higher education. It was the city’s explosive growth after World War II, however, that led to the founding of the rest of the huge system in all five New York City boroughs and their administrative unification into today’s City University.

From its inception, the college and then the university was open to all graduates of

accredited New York City high schools, although high school grades and class rankings determined whether students enrolled at the selective four-year colleges or went to two-year community colleges for more academic preparation. The racial and ethnic complexion of the students, however, changed radically. At the beginning of the 20th century, more than three-quarters of the men at City College and more than one-third of the women at Hunter were Jewish, and almost all students at both schools were white. As the 20th century neared its end, and the student population had grown to more than 200,000, two-thirds of the students were members of non-white minorities, with blacks making up about 37%, Hispanics 30%, and Asians more than 11%. Fifteen per cent are foreign born.

About 40% of the blacks and Hispanics traced their origins to the Caribbean, where inadequate educational facilities left them less than prepared to handle college-level studies in New York. The net result was a radical change in the City University curriculum to provide remedial courses in almost every area of basic education.

In 1970, however, minority students protested what they perceived as racially discriminatory admissions policies that tended to send educationally deprived blacks to two-year community colleges and better educated whites to the four-year institutions. Student demonstrations forced the university to adopt open enrollment policies that allowed any New York City high school graduate, by right, to enroll at any branch of the university and receive any necessary counseling and remediation to assure successful completion of the academic program. Originally seen as a breakthrough in academic democracy and an opportunity for financially deprived students to avail themselves of quality higher education, open enrollment perpetuated the de facto ethnic and racial segregation that had ignited the student protests in the first place. Black and Hispanic students tended to make up

the bulk of the students in the boroughs where they lived, and whites filled university buildings in the areas where they lived. In addition to perpetuating de facto segregation, open enrollment sent academic standards at the university plunging. More than 70% of incoming freshmen needed one or more courses in basic or remedial reading, writing or mathematics, and fewer than 25% of students were able to graduate after five years, while only 40% graduated after eight years. As academic standards fell, senior faculty began fleeing the university, along with academically gifted white students, who enrolled in nearby branches of the more academically demanding state university system. Moreover, some of the university's four-year colleges saw an exodus of senior faculty as academic standards were lowered to accommodate academically deprived students. As academic standards dropped, white students fled City University and enrolled in nearby branches of the state university system, where they remained a majority. In 1976, the City University restored the two-tier system in which only the two-year community colleges offered open enrollment, while the four-year colleges offered a university-wide entrance examination that placed students in each of four-year colleges according to academic ability. The changes made little improvement, however. By 1998, only 30% of incoming freshmen graduated after five years and only 42% after eight years. In 1999, the university decided to restore the academic standards that had made it a great university and bar admission of students who could not pass proficiency tests in reading, writing and mathematics. In 2001, the university abandoned all remedial education in its four-year colleges and relegated all applicants who needed such education to the university's two-year schools to upgrade basic skills before attending the four-year colleges. Ironically, the decision to end remedial education at New York City's public four-year colleges came at a time when 80% of public four-year colleges across

America had integrated remedial education into their basic curriculum. Indeed more than 68% of all private four-year colleges were routinely offering remedial education to students who needed such help.

(See also OPEN ADMISSIONS.)

civics A one-year course in American government, its mechanics and methods of functioning. Once a required part of the public and private secondary school curriculum, civics courses included a study of the traditions of democratic thought and philosophies from Plato and John Locke to John Adams and James Madison; an in-depth study of the Declaration of Independence, the U.S. Constitution and the *Federalist Papers*; a study of contemporary federal, state and municipal governments and how they work; and a study of the history and current status of contemporary issues. During the 1950s and 1960s, civics was gradually absorbed into the social studies curricula of most public schools and into American history courses at most private secondary schools. There have been efforts to expand its importance, in the wake of studies in the 1980s showing most American high school students ignorant about government processes and citizen responsibilities. More than one-third of the nation's high school seniors did not understand the fundamentals of American government, according to the U.S. Department of Education's National Assessment of Educational Progress in 1999. Only about 26% of high school seniors had "proficient knowledge" of the workings of government. The rest—39% fell in the middle, displaying understand of civics "at or above a basic level."

Civilian Conservation Corps (CCC) A 1930s, Depression-era program of the U.S. government that pioneered many early techniques in adult education and put more than 2.5 million unemployed young men to work on vital

land and forest conservation projects. Established in the spring of 1933 by executive order of President Franklin D. Roosevelt, the CCC hired men (women were not permitted) between the ages of 18 and 25 from poor, usually welfare families to work on erosion prevention and reforestation projects at military-style camps set up across the country by the Departments of Interior and Agriculture. The men were paid \$30 a month—a relatively generous sum for the time when added to the free living quarters, food and clothing they received.

Initial CCC enrollment of 250,000 men more than doubled within two years. Over the nine years of its existence, CCC enrolled more than 2.5 million. In addition to teaching the men the basics of hygiene and proper nutrition, CCC developed a far-reaching education program that started with camp libraries, but expanded into formal education with the discovery that thousands of enrollees were illiterate.

By 1937, the U.S. OFFICE OF EDUCATION, now the Department of Education, had set up literacy programs at CCC camps that taught more than 35,000 illiterates to read and write. More than 1,000 of them earned high school diplomas and 39 earned college degrees. CCC camps also set up vocational education programs that taught thousands of workers such skills as carpentry, woodworking and metalworking, while their daily work taught them the principles of forestry and agriculture.

After the United States had sent all its able-bodied men to war in 1942, Congress voted to disband the CCC, and its work was never resumed. During its nine-year existence, however, it was responsible for educating hundreds of thousands of uneducated men, who, in return, were responsible for the planting and preservation of literally billions of trees and halting the erosion of millions of acres of land. In so doing, they created hundreds of parks and recreation areas.

Civil Rights Act of 1964 A far-reaching federal law that banned racial and ethnic segregation in American public schools, colleges and universities and all other educational institutions receiving federal assistance. School desegregation was but one of eleven sections or “Titles” in what was the most sweeping federal law ever passed to guarantee equal rights to all Americans. The most important were Title I, which guaranteed every American citizen the right to vote; Titles II and III, which desegregated all public facilities; Title IV desegregated public education; Title VI, which banned discrimination in federally assisted programs of any kind, including construction projects; and Title VII, which outlawed discrimination and segregation in most employment.

The law also strengthened the powers of the CIVIL RIGHTS COMMISSION and gave the U.S. Attorney General the power to take legal action to force schools to desegregate. In an effort to encourage voluntary desegregation, however, it provided for federal financial and other assistance to districts desegregating their schools. In effect, the act translated the various Supreme Court rulings against racial segregation into the law of the land. It also reflected the growing impatience of the Court with the reluctance of many communities to desegregate their schools. Ten years had passed since the court decision in *BROWN V. BOARD OF EDUCATION OF TOPEKA*, declaring segregated schools unconstitutional, but school districts throughout the South were continuing to ignore the ruling. To end such disobedience, the new law promised swift punishment from the attorney general for districts that continued to flout the law, but offered tempting financial rewards to those districts that complied.

Civil Rights Commission A six-member group appointed by the president, with responsibility to investigate racial, religious, ethnic and other types of discrimination. The com-

mission was also empowered to conduct appropriate studies of civil rights in the United States and to recommend changes in government civil rights policies and laws. Created in 1957, the commission remained a relatively ineffectual body until the Civil Rights Act of 1964 broadened its powers. The new law also asked the commission to study “the lack of availability of equal educational opportunity for individuals by reason of race, color, religion, or national origin in public educational institutions at all levels in the United States. . . .”

The result was a 1967 report entitled *Racial Isolation in the Public Schools*, which documented dramatic inequalities between white and black education in American public schools. It found that more than three-quarters of elementary school students in American cities attended schools that were virtually all-black or all-white and that the black schools were inferior in every way, with inferior curricula and less competent, less educated teachers than in white schools. The result was a sharply lower level of academic achievement among black students and a sharply reduced likelihood that they would ever enroll in college. The commission suggested a group of remedies that not only included remedial education, but a form of COMPENSATORY EDUCATION that would include supplementary educational services and city-suburb educational collaboration to bus black students to the better white schools of the nearby suburbs.

The commission’s report confirmed the findings of a similar study the previous year—the Coleman report—and the two reports changed the direction of American policy on race and education. Until then, American policy had been to desegregate schools by combatting *de jure*, or legal segregation. The two reports changed the policy to one of affirmative action bent on integration of schools and the ending of *de facto* segregation produced by the income level and the racial or ethnic

makeup of neighborhood residents. The new policy not only led to court-ordered busing of schoolchildren to schools outside their own neighborhoods. It made it illegal for any district to allow any school to have a student body made up of 85% or more blacks. Despite the new policy, however, more than two-thirds of all black students still attend schools that are 50% to 100% nonwhite—largely because of the failure of most communities to integrate housing on a noneconomic basis.

Civil War The war between the northern and southern states. Fought over four years, from 1861 to 1865, the war had far-reaching short- and long-range repercussions on American education. The immediate effects were the destruction or closure of thousands of schools and colleges. Because of their central locations in most communities, schools were invariably commandeered by the military as lookout posts or headquarters and then destroyed by invading forces. Colleges were converted into hospitals, barracks and training centers. As conditions deteriorated in the South, schools and colleges, like many homes, were looted, purposely destroyed or simply dismantled for firewood.

If the toll on school buildings was high, the toll on students and faculty was even higher. Regardless of how far they were from the fighting, students and teachers by the tens of thousands marched off to war. Colleges and schools as far away as Maine and Michigan barely managed to keep their doors open and offer a scaled-down curriculum to those who remained behind. Many colleges simply closed, and some never reopened.

Although the Civil War heaped women with more than their share of tragedies, it nevertheless had one long-range educational benefit: it opened the doors of the schoolhouse to women teachers. Before the war, only about 10% of American teachers were women. By the

1880s, a shortage of manpower had helped women capture 63% of all teaching positions in the United States generally and more than 90% in cities. As male teachers had marched off to war, women replaced them, and when they returned from war they were paid far higher wages to rebuild the nation's farms and factories than they could earn as schoolmasters.

But the most important educational benefit of the Civil War accrued to the nation's former slaves. As northern armies conquered the South, tens of thousands of blacks flocked to army camps, where Union generals not only had to feed and clothe them, but begin the process of educating them and preparing them to support themselves as free men and women. Initially under the direction of the Army, but later under the direction of the FREEDMEN'S BUREAU, hundreds of northern teachers traveled south to set up schools and colleges to teach blacks. By 1895, they had built or helped build 27 colleges and 62 secondary schools for blacks, where none had existed before.

Another benefit of the Civil War for education was the effort by the Union to open the western territories and lure them into the Union as states. While the Homestead Act of 1863 and other measures encouraged settlement of the West, the Land Grant (Morrill) Act of 1862 offered tens of thousands of acres of free government land to each state (30,000 acres for each senator and representative) to sell and use the proceeds to establish and maintain colleges. The new "LAND-GRANT" COLLEGES were to offer practical education in agriculture, mechanics, mining and military tactics, as well as the traditional arts and sciences. Although some state officials profited handsomely from the sale of the lands, the net result was the construction across the United States of the colleges that spawned the nation's public state universities and colleges.

Clark, Kenneth B. (1914–2005) African-American social scientist, psychologist and edu-

cational reformer, whose pioneer research in education proved crucial to the U.S. Supreme Court's 1954 decision to outlaw school segregation. Born in Panama, Clark grew up and attended public schools in Harlem in New York City. He graduated from all-black Howard University in Washington, D.C., in 1935, with an intellectual elite that assumed the reins of black leadership in post-World War II America and eventually won sweeping legal guarantees for American minorities. After earning an M.S. at Howard and a Ph.D. at New York's Columbia University (see COLUMBIA COLLEGE) he taught at HAMPTON INSTITUTE in Virginia for a year. While there, he worked with Gunnar Myrdal in the preparation of the latter's important study of race relations entitled *An American Dilemma*.

In 1942, Clark became the first black professor at the College of the City of New York and, four years later, formed the Northside Testing and Consultation Center with his wife, psychologist Mamie Phipps Clark. Later called the Northside Center for Child Development, the Clark center studied and treated emotionally disturbed children. Together, the Clarks devised projective tests that used doll play and coloring activities to determine how children felt about themselves and others of the same and different races. Using the results of their studies and comparable work by other psychologists, Clark demonstrated that school segregation had "definitely detrimental effects on the personality of the Negro child." Among the detrimental effects were "confusion in the child's concept of his own self-esteem . . . hostility towards himself, [and] hostility toward whites. . . ." In 1953, Clark published his results in his book *Desegregation: An Appraisal of the Evidence*.

Clark also testified about his results in three of the four landmark cases that the U.S. Supreme Court grouped together in the decision known as *BROWN V. BOARD OF EDUCATION OF TOPEKA*. Citing Clark's study as the basis for its ruling, the Court declared racial segregation of schools

“patently detrimental to black children” and, therefore, unconstitutional. Clark then helped formulate a long-range program for implementing the court’s desegregation order “with a minimum of racial disturbance.” The program called for “a clear and unequivocal statement of policy” by leaders and authorities; persistence in the face of resistance; strong enforcement action; refusal of authorities to engage in or tolerate subterfuge; and an appeal to American traditions of “fair play and justice.”

After his triumph in Washington, Clark returned to City College, where he taught psychology until his retirement in 1972. He also turned his attention to de facto segregation of New York City children in neighborhood schools. In 1962, he founded an organization called Harlem Youth Opportunities Unlimited (HARYOU) to provide COMPENSATORY EDUCATION and instruction to students falling behind in their school work and to provide jobs for unemployed black youth. HARYOU also lobbied unsuccessfully to integrate New York City’s schools by busing children to schools outside their neighborhood and thus drawing children from all over the city to each school. HARYOU was eventually absorbed into President Lyndon B. Johnson’s War on Poverty program, and Clark described his conclusions from his work at HARYOU in the powerful book *Dark Ghetto* (1965). In it, Clark examined ghetto schools and the social dynamics, psychology, pathology and power structure of the ghetto. “Nothing anywhere in the training of social scientists, teachers or social workers,” he concluded, “now prepares them to understand, to cope with, or to change the normal chaos of ghetto communities.”

Clark University The first American institution of higher education started solely for graduate education in the sciences. Clark was founded in Worcester, Massachusetts, in 1887 by Jonas Gilman Clark, a philanthropist who

had made a fortune in mercantile and real estate ventures. Clark named G. STANLEY HALL, the “father” of child psychology and educational psychology, to be the first president. Hall added an undergraduate college for men in 1902. At Hall’s invitation, Sigmund Freud, Carl Jung and other leaders in the new field of psychology gathered at Clark in 1909 to discuss the psychoanalytic movement with American scholars. In 1921, Clark University added what became the most renowned graduate school of geography in the United States. It added a college for women in 1942, which eventually merged with the men’s school. Today’s coeducational institution has more than 3,000 students—more than 60% of them women.

classical education A curriculum that emerged from the clerical and ministerial colleges of the Middle Ages. It has now come to mean a broad-based study of the liberal arts and sciences, as opposed to practical or preprofessional courses of study. The term *classical* generally refers to the literature, art, architecture and ethics of ancient Greece and Rome. As Europe emerged from the Middle Ages and founded its first universities, classical education was based on the study of Greek and Latin. Students learned both languages fluently and studied the works of Aristotle (logic, rhetoric and natural, moral and mental philosophy), Boethius (logic, rhetoric, music and arithmetic), Cicero (rhetoric), Euclid (geometry) and Ptolemy (astronomy). After four years, most went on to study theology, though some studied medicine or law.

The founders of the first colleges in the American colonies were all churchmen who retained the classical curricula of England’s Oxford and Cambridge universities, but added emphasis to religious studies in an effort to train new ministers. As Protestants divided over questions of orthodoxy, so did the curricula of

their colleges. Many opened their doors to nontheological studies and added the areligious, political and philosophical works of Locke, Rousseau and other thinkers who emerged during the Age of Reason in Europe and Britain. By the end of the 18th century, the term *classical education* had gained a far broader meaning and included the study of literature, poetry, drama, rhetoric, logic, philosophy, history, art, music and foreign languages, which included the required study of Latin and Greek and at least one or two modern languages.

In modern universities, so-called LIBERAL ARTS and HUMANITIES curricula (usually literature, philosophy, history, music, art and foreign languages) approach classical studies somewhat, as does the GREAT BOOKS PROGRAM developed at the University of Chicago.

classical languages The languages used in the classical civilizations of ancient Greece and Rome. In early America, most schools also required Hebrew to permit the study of the Scriptures in the languages in which they were written. Until the 19th century, the study of classical languages was required by colleges and universities throughout the Western world, including the American colonies, where most colleges trained students for the ministry.

classical realism A philosophy which holds that all truths—all “realities”—may be found in the great works that have survived throughout history and become eternal. Classical realism is the philosophy that is the basis of the educational theory of PERENNIALISM, which, in turn, formed the basis of the GREAT BOOKS PROGRAM developed at the University of Chicago.

classified personnel Noncertified school-system employees responsible for noninstructional services such as plant maintenance, food preparation and distribution, clerical work, business management, health care and teacher

assistance. Some districts divide classified personnel into two subcategories: special pupil support and noninstructional support. The former refers to those who interact with and provide noninstructional services directly to students. Examples include teachers’ aides, food servers, playground supervisors, and “boarding supervisors,” who supervise students as they board school buses. Noninstructional support staff perform services to the school—plant maintenance, bookkeeping, and so on—and have no direct contracts with students.

Most school districts have written rules and regulations covering classified personnel, including job descriptions, wage scales, fringe benefits, job prerequisites, available training, evaluation procedures, promotion and dismissal policies, grievance procedures and union membership requirements, if any.

class rank The position of a student’s academic grade point average relative to other students in the class. Class rank is often an important factor in the admissions process at academically selective colleges and universities. Class rank, however, has become a source of some controversy in many schools, because of the possible adverse effects on students of publicly disclosing their academic rankings. A low ranking, for example, may cause public humiliation for some students. Other students may become apathetic about their schoolwork if they feel mired at a particular level in the rankings. Class rank disclosures may also produce an excessively competitive school atmosphere that encourages students to put grades and competition ahead of acquiring knowledge. To meet the needs of selective colleges, some schools attempted to compile confidential class rankings, but, under the provisions of the BUCKLEY AMENDMENT, students and their parents have the right to review all materials in any files the school may keep about them. To

bypass the problem, most schools simply stopped compiling such rankings.

classroom The room in which a group of students meet regularly, for an average of 54 minutes at a time in U.S. schools to study the same subject or participate in a common activity. The average American classroom is designed to accommodate 30 or more students, although size varies widely and depends on student population projections at the time each school was built.

On average, four square feet of space is allotted for each student, in addition to the space required by chairs, desks and tables. To

foster an orderly atmosphere, desks are usually placed in rows and may or may not be bolted to the floor. The latter is generally covered with vinyl or carpeting in newer schools and wood parquet in older schools. In the front of the room is the teacher's desk and on the wall behind, and perhaps on one or more other walls, a chalkboard.

Classroom layouts in the two early elementary school years and kindergarten often differ radically from other classrooms. Kindergartens usually have a wide, open central space and a half-dozen or more learning areas—for mathematics, books, geography, plants, and so on—spread around the perimeter of the room. Tables



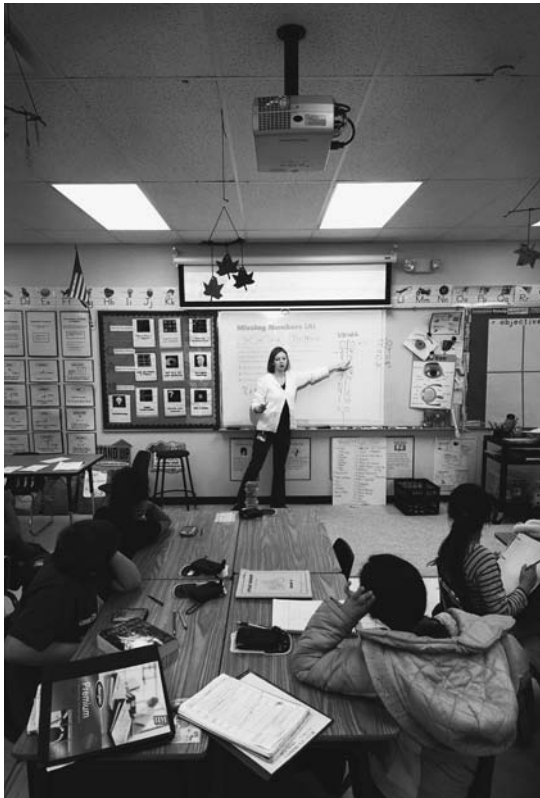
Row layout remains the standard in most middle and high school classrooms.

and chairs are movable, and light and small enough for five-year-olds to carry and rearrange in clusters, according to the activity. First and second grade classrooms resemble kindergarten classrooms, but are generally smaller and accommodate fewer students. With smaller groups, first and second grade classrooms are designed to be less chaotic and permit more focus on learning than on play. The perimeter of the classrooms, however, are still divided into learning areas, and the chairs and desks remain movable. The fixed desk usually makes its first appearance in third grade, where the classroom takes on the conventional appear-

ance of the traditional classroom described above.

The classroom configuration of fixed desks in rows remains the standard in most middle schools and high schools, except in art, music and science-laboratory classes, where active student participation is required as part of the lesson plans. Some progressive schools, however, recognize that eyes-front seating tends to inhibit discussion by less aggressive students, and, in many classes, such schools have introduced seminar-style seating, whose configuration varies according to the subject, the size of the classroom and the number of students. In one configuration, students in such classrooms may be seated at a single, long, rectangular table, with the teacher either alone at its head or in the middle of the long edge, among students—whichever gives the teacher easier access to the marker board and other demonstration materials. Another configuration sees four long tables arranged in a square, with students seated along the perimeter and the teacher “boxed” within, although with access through an opening in the square to chalkboards and demonstration materials. The advantage of the open-square configuration is the teacher’s ease of movement from one student to another. The elongated, single-table configuration often sees less aggressive students sit as far from the teacher as they might in a conventional fixed-seating classroom.

Since 2000, the vast majority of schools have installed conventionally wired and wireless telecommunications networks to permit students to operate computers at each classroom seat—either school-owned desktop units or student owned laptops. Such “WIRED CLASSROOMS,” as they are called, permit students, individually or simultaneously, to access all but limitless textual and audiovisual instructional and reference materials from sites anywhere on earth. They allow teachers to transfer lecture materials—and examination questions—onto each student computer, and students can



This classroom features a number of high-tech devices, from a ceiling-mounted LCD projector to Palm Pilots for every student. (Associated Press)

take examinations directly on their computers for instant grading before they leave their classrooms—and instant registration in the teacher's and the school's records.

(See also COMPUTERS; DISTANCE LEARNING; INTERNET; TELELECTURE; VIRTUAL CLASSROOM.)

classroom aides Noncertified school personnel, whose duties vary widely from school to school and classroom to classroom, depending on the needs of individual teachers and their students. Some aides offer purely noninstructional support, such as clerical assistance that frees the teacher from paperwork to do more teaching. Others may escort students from one area of the school to another or supervise students in isolated quiet-zones used as disciplinary or study areas. Better trained aides may serve as tutors for slower students or as bilingual tutors for non-English-speaking students. Some colleges offer two-year training programs for educational paraprofessionals.

The use of classroom aides reached a peak in American public schools in the 1960s, when federal antipoverty programs provided grants to inner-city schools to hire them and thus free teachers to do more teaching. Their use increased, despite evidence from the BAY CITY, MICHIGAN, PROJECT, a two-year study of the city's schools, indicating that the addition of aides had not improved student achievement. Aides were the first to lose their jobs in the 1980s, when tax revolts forced widespread cuts in school budgets across the United States.

classroom management The organization and techniques used by teachers to control students and assure desired learning results. A complex group of skills and techniques, classroom management requires a combination of teaching skills, a knowledge of and ability to use various teaching strategies and teaching materials, skill in organizing activities that promote learning, the ability to maintain discipline and the ability

to deal with a wide range of student abilities and backgrounds. Among the many aspects of classroom management are motivating students to learn and teaching them the self-discipline to work independently and assume responsibility for themselves as well as the ability to work cooperatively with others. It also involves teaching disruptive students how to adapt to the classroom and become productive. No single management technique proves successful with all students in all classes. Classroom management courses in teachers colleges, however, do teach a wide variety of pedagogical techniques, theories of learning, children's needs and behavior patterns, effective incentives and theories of group psychology and group dynamics.

classroom noninstructional activities

Activities in classrooms unrelated to the subjects taught. Included are collecting signature cards signed by parents, handing out test blanks or corrected tests, waiting for students to put away unneeded books and materials and find those they need, waiting for students to don or doff their coats or overshoes, cleaning up, discipline, socializing, listening to school announcements and reminding students about school rules.

Although many noninstructional activities are essential to the welfare of students and efficient school operations, many educators believe they have reached the point where they may be interfering with learning in some schools and classrooms. The NATIONAL COMMISSION ON EXCELLENCE IN EDUCATION found that instructional time in U.S. public schools averaged a mere 22 hours a week and often fell to as low as 17 hours a week in some schools. A University of Michigan study found that fifth graders only spend 64% of their school time on academic activities, compared to 87% for Japanese students.

classroom observation A direct method of evaluating teacher performance and CLASSROOM MANAGEMENT skills. Classroom observations may be conducted by trained outside observers, by

other teachers or by school administrators. Generally, observers try to rate various classroom management techniques as objectively as possible, using standardized rating forms such as the FLANDERS INTERACTION ANALYSIS. Developed by Ned A. Flanders and his colleagues at the University of Minnesota, the interaction analysis asks evaluators to note the frequency and duration of each of 10 categories of classroom interactions. Seven are teacher-to-student interactions ("praises or encourages," "asks questions," and the like), two are student-to-teacher or student-to-student interactions and the tenth measures the cause and duration of periods of silence.

class size The number of students in a regularly scheduled class. There is widespread disagreement over the effects of class size on student achievement, although all studies agree that student achievement climbs sharply when student-teacher ratios dip below 1:15 and declines sharply when student-teacher ratios exceed 1:25. A 1985 study of early elementary school students in Tennessee found that a greater percentage of students scored above the national averages in reading and mathematics tests in small classes (13 to 17 students) than students in larger classes (22 to 25 students). Here are the percentage of students that scored above the national averages on the Stanford Achievement Tests in four different grades:

	Kindergarten	First Grade	Second Grade	Third Grade
Reading				
Small class (13–17 students)	59%	64%	61%	62%
Large class (22–25 students)	53	53	52	55
Math				
Small class	66	59	76	76
Large class	61	48	68	69

Average class size in United States public schools dropped markedly from the mid-depression (1930s) level of about 40 pupils to 17.2 in the mid-1990s, before a tide of immigrants sent the average class size rising again in 2002 to 21.1 in the average elementary school classroom and 23.6 in the average high school classroom. Class size, however, can be misleading, skewed as it often is by overcrowded homeroom "classes" devoted to nothing more than daily announcements. Often more revealing are pupil-teacher ratios, which have declined steadily in the United States public elementary and secondary schools, from 26.9 in 1955 to 16.1 in 2002. Private-school pupil-teacher ratios declined from 31.6 to 16.2 during the same period. Pupil-teacher ratios, however, are not without their own flaws, in that esoteric subjects with one teacher for but one or two students can skew a school's overall pupil-ratio downward and obscure disastrously overcrowded classes for required courses in basic subjects.

class trips School-sponsored, off-campus excursions to a variety of educative sites and events. Depending on student age, class trips may include visits to historical sites, museums, businesses, factories, farms, hospitals, firehouses, police stations and other places of interest to the community, or to attend performances at concert halls, theaters and opera houses. In simplest terms, class trips convert textbook materials to real life. Such trips supplement classroom education by converting nonparticipatory textbook descriptions to participatory, first-hand experiences. Visits to museums and historic sites bring history to life and dramatize the way the world once was; visits to businesses and similar destinations show students how the world functions and the wide variety of jobs associated with each place they visit; visits to theaters, concert halls and opera offer cultural enrichment few schools can provide on cam-

pus; and visits to colleges, universities, libraries and other educative institutions show them how much more knowledge awaits them.

clergy Those ordained by their CHURCH to perform sacred rites and provide spiritual and, often, temporal guidance. The Puritan Congregational clergy who came with the earliest settlers to New England were deeply involved in education because of the unique practice their church followed of naming two ministers to each congregation: a pastor in charge of church activities and a teacher to deliver sermons and catechize children. The practice was in keeping with St. Paul's words to the Corinthians: "And God had appointed in the church, first apostles, second prophets, third teachers. . . ." A shortage of ministers in the American colonies made the practice difficult to follow, however, especially in isolated communities. In 1648, the four New England colonies signed the CAMBRIDGE PLATFORM, an agreement that unified the offices of pastor and teacher and ensured the church control over education during the remainder of the colonial era. The clergy maintained that control until the mid-1840s, when the first secular, state-run public school systems began developing in New England and New York. By the end of the 19th century, secular public schools had become the primary provider of education in the United States, and the clergy's role in teaching was relegated to CHURCH-RELATED SCHOOLS. By the mid-20th century, as the number of men and women entering the clergy diminished and pastoral obligations monopolized their time, they gradually ceded their role as teachers to lay teachers.

clerk-of-the-works An employee or consultant paid by an institution or school district to enforce contract specifications on construction projects. Responsible solely to the school district, the clerk's job is to inspect all phases of

construction on a daily basis, to prevent architectural design flaws and spot any fraudulent practices such as the use of substandard materials or the substitution of less costly materials than those called for in the contract.

Clery Campus Security Act of 1990 A federal law requiring American colleges to report to the U.S. DEPARTMENT OF EDUCATION by October 1 each year all data on crimes that occurred on their campuses during the previous academic year and to make the tally available to prospective applicants for admission. The law was passed following intense lobbying by the parents of a girl who was murdered on the Lehigh University campus in Bethlehem, Pennsylvania, in 1986. Hearings prior to the passage of the law revealed that some colleges had concealed crime statistics for fear of adverse effects on enrollments—especially at urban colleges in high-crime neighborhoods. Since the passage of the act, almost every college has intensified campus security efforts, including careful screening at some campuses of every person entering the grounds and buildings. Many colleges have installed security cameras at all entrances; others have ID card swipe systems at residence hall entrances.

Despite its goals, the act has been the target of criticism since its inception, with some critics charging that many colleges continue to underreport crimes by failing to include crimes against students in areas adjacent to but technically not on campus. In addition, many colleges misclassify burglaries as larcenies, which they are not required to report. Thus, the University of Michigan, which reported a mere 25 burglaries on campus in 2004, experienced more than 900 larcenies that went unreported. Other types of misclassification and underreporting result from college counselors' failing to report rapes or other sexual assaults of students who come to them for counseling. Like many other student crimes

on campus, such offenses are often handled as disciplinary problems rather than reportable felonies. Still other critics of the Clery Act argue that raw crime numbers are meaningless—that too many factors can influence such numbers at a particular college at any given time and give the impression that a safe campus with a high number of reported crimes is unsafe and that an unsafe campus with low numbers is safe. In 2003, for example, the number of cases of negligent manslaughter on college campuses across the United States increased by a frightening 900%, but, in fact, the number climbed from 1 case of negligent manslaughter to 10—in effect, a meaningless increase for more than 6,400 campuses with a population of nearly 16.4 million.

(See also CRIME ON CAMPUS; SCHOOL SECURITY.)

Cleveland Board of Education v. LaFleur A 1974 U.S. Supreme Court decision that the Cleveland Board of Education had violated the constitutional rights of women by requiring pregnant teachers to take unpaid maternity leaves several months before and after childbirth. The Court said that the mandatory, uniform cutoff dates were too restrictive and that they violated a woman's basic human right to marry and procreate. The Court found, however, that the school district had the right to require advance notification of plans to take maternity leave and to require a doctor's certificate attesting to the good health of the teacher before she is permitted to return to work.

Cloze procedure A test of reading ability in which the student must guess missing words in a paragraph on the basis of its context. Usually about 250 words long, the test opens and ends with intact sentences, and the remaining sentences contain missing words at regular intervals—every fifth word, for example. The student is then asked to fill in the blanks with the most appropriate words.

coach, athletic A teacher/administrator of one or more sports. Depending on the size of the institution and age of participants, a coach's duties may include teaching rules and methods of play, training and conditioning participants, planning and reviewing team strategies, recruiting new players, scheduling games and matches with other teams, making travel arrangements for non-home games and matches, hiring assistant coaches and staff members such as trainers and equipment managers, awarding scholarships and budgeting expenses for new equipment, uniforms, travel and administration. At the high school, college and university level, a coach of a major sport may also have key public relations duties as principal spokesperson for the team and, often, the most publicly visible representative of the institution. Public relations activities may also include fund-raising for team activities, for new or expanded team facilities and for athletic scholarships.

In many secondary schools and in almost all primary schools, coaches are usually full-time teachers in one or more academic areas, and they work as coaches on a part-time extra-fee basis. At the college level, they are usually untenured full-time coaches. Most secondary schools require coaches to have bachelor's degrees in physical education, most colleges and universities usually waive the requirement for former professional athletes and experienced coaches who have demonstrated organizational, administrative and leadership skills. There are no gender requirements in coaching. In general, men tend to coach male teams and women female teams, but because of the greater number of men in coaching, many of the latter coach female teams, while few women coach male teams.

Coalition of Essential Schools A network of public schools that adopted reforms of educator THEODORE S. SIZER to raise academic standards. Founded in 1984 in response to declining academic achievement by American public

school students, the coalition grew from 12 schools in four states to more than 600 schools across the United States by 2000. Member schools replace traditional administrative and instructional methods with a system that subordinates administration to the academic needs of students and places teachers in control of the curriculum. Member schools also try to increase parental involvement and personalize teaching. Underwritten by large corporate and foundation grants, the coalition spends most of its funds retraining teachers to instruct in such broad topic areas as “the humanities” and “math/science,” instead of traditional courses. Instead of lecturing, teachers pose challenging, “essential” questions to stimulate student debate and then, rather than providing answers, point students in the right directions to acquire the necessary knowledge. In effect, coalition teachers help pupils think and master skills and knowledge rather than force them to digest facts.

Operating in teams to coordinate the curriculum, teachers serve as “coaches” to small groups of students who function under a “student-as-worker” scheme in which group members help each other to master topics under study—the theory being that students learn best when they’re involved in the process. Teachers usually teach more than one subject but cover fewer topics in greater depths in classes lasting two hours instead of the usual 45 minutes. Total student loads are reduced to no more than 80 students per teacher, and teachers work with the same students for two years instead of one. Teacher teams plan and coordinate broad topics to be covered each week and allocate the proportion to be covered in each subject area. In simplest terms, a teaching team (see *TEAM TEACHING*) might, for example, coordinate the study of ancient Egypt in history class with the geometry of pyramids in math class, hieroglyphics and the origins of written language in English class, the physics of moving heavy objects in science

class and the study of Egyptian art forms in art class. Broad topic coverage of this kind is designed to teach students “to learn to use their minds” as well as to learn facts. The goal of teachers is thus student “mastery” of a topic rather than compulsive “coverage” of every item in a textbook or syllabus. All students must prove their mastery of each topic before being allowed to pass into higher grades, and mastery must be demonstrated through in-depth essays and projects rather than multiple choice tests.

Another key goal of coalition schools is universality, with all students obtaining the same complete education in the academic track, regardless of whether they eventually plan attending college. Coalition schools thus eliminate all nonacademic GENERAL EDUCATION courses and almost all vocational courses. “An intellectual education,” Sizer insists, “is every citizen’s right.” Coalition schools also encourage close teacher-student ties, with teachers and administrators sharing teaching, administrative and counseling duties and creating an atmosphere of trust, decency and high expectations for all students.

Although coalition schools scored dramatic successes in reducing high school dropout rates and raising academic achievement and college admission rates, the coalition often ran into opposition from teachers who feared losing their jobs if all students were on a single academic track and schools eliminated the general and vocational education tracks. Parents in many rural areas also opposed the coalition, fearing that a restructured school day, in which academics have top priority, would interfere with extracurricular activities that are taught as “classes” in many schools. Football, for example, is considered a class and is a top high school priority in many communities in Texas, Alabama and other states.

(See also *ACCELERATED SCHOOLS PROJECT*; *COLEMAN REPORT*.)

cocurricular activities The entire range of student activities unrelated to the academic curriculum. A relatively new term, cocurricular activities adds all out-of-school activities—jobs, professional work, community service, recreational pursuits, and so on—to the student’s in-school EXTRACURRICULAR ACTIVITIES, such as sports, student publications and student government.

Code of Ethics of the Education Profession A relatively ineffectual statement of principles for teachers, developed by the NATIONAL EDUCATION ASSOCIATION in 1929 and revised several times since. The code, which carries no enforcement provisions, consists of a preamble and two principles of commitment to the student and to the teaching profession.

PRINCIPLE I

Commitment to the Student

The educator strives to help each student realize his or her potential as a worthy and effective member of society. The educator therefore works to stimulate the spirit of inquiry, the acquisition of knowledge and understanding, and the thoughtful formulation of worthy goals.

In fulfillment of the obligations to the student, the educator

1. shall not unreasonably restrain the student from independent action in the pursuit of learning;
2. shall not unreasonably deny the student access to varying points of view;
3. shall not deliberately suppress or distort subject matter relevant to the student’s progress;
4. shall make reasonable effort to protect the student from conditions harmful to learning or to health and safety;
5. shall not intentionally expose the student to embarrassment or disparagement;
6. shall not on the basis of race, color, creed, sex, national origin, marital status, political or reli-

gious beliefs, family, social or cultural background, or sexual orientation, unfairly

- a. exclude any student from participation in any program;
 - b. deny benefits to any student;
 - c. grant any advantage to any student;
7. shall not use any professional relationships with students for private advantage;
 8. shall not disclose information about students obtained in the course of professional service, unless disclosure serves a compelling professional purpose or is required by law.

PRINCIPLE II

Commitment to the Profession

The education profession is vested by the public with a trust and responsibility requiring the highest ideals of professional service.

In the belief that the quality of the services of the education profession directly influences the nation and its citizens, the educator shall exert every effort to raise professional standards, to promote a climate that encourages the exercise of professional judgment, to achieve conditions which attract persons worthy of trust to careers in education, and to assist in preventing the practice of the profession by unqualified persons.

In fulfillment of the obligations to the profession, the educator

1. shall not in an application for a professional position deliberately make a false statement or fail to disclose a material fact related to competency and qualifications;
2. shall not misrepresent his/her professional qualifications;
3. shall not assist entry into the profession of a person known to be unqualified in respect to character, education, or other relevant attribute;
4. shall not knowingly make a false statement concerning the qualifications of a candidate for a professional position;

5. shall not assist a noneducator in the unauthorized practice of teaching;
6. shall not disclose information about colleagues obtained in the course of professional service unless disclosure serves a compelling professional purpose or is required by law;
7. shall not knowingly make false or malicious statements about a colleague;
8. shall not accept any gratuity, gift, or favor that might impair or appear to influence professional decisions or actions.

coeducation The admission and instruction, on the basis of full equality, of male and female students in the same classrooms and schools. Coeducation dates back at least to Plato's Academy in ancient Greece, although it remained a rare phenomenon until the colonial era in America, when it was impractical to try to educate the small numbers of children in isolated rural communities in separate, single-sex schools. THOMAS JEFFERSON, BENJAMIN FRANKLIN and Dr. BENJAMIN RUSH were all strong proponents of coeducation, and many common, or public, elementary schools practiced coeducation in the 19th century as the United States began its nationhood. However, common school education only lasted about 12 weeks a year for about three years, and attendance was not required. Most parents sent their boys to common school to keep them out of mischief between the end of the fall harvest and the first spring planting. Although girls had equal access to such schools and a few actually attended, most stayed at home to learn the "domestic arts" from their mothers and grow up to become good wives and mothers themselves.

During the first half of the 19th century, women were barred from secondary schools and colleges, although wealthier girls had access to private female academies and seminaries and even college-level schools. But coeducation did not begin at the secondary school level until the emergence of universal public school education

in the 1830s and 1840s, in Massachusetts, Connecticut, Rhode Island and New York. The growth of the AMERICAN LYCEUM movement opened adult education to women, and by 1826 the more than 3,000 lycea in the U.S. were completely coeducational. In 1841, Oberlin College became the first college to admit women with men, although women were not granted the same academic privileges as male students. Oberlin's rules made certain that women "kept silence in public and had their papers read aloud in class by the men students." In 1852, ANTIOCH COLLEGE, in Yellow Springs, Ohio, became the first coeducational college where women shared all but the dormitory facilities with men on a truly equal basis. Antioch also became the first college with a women faculty member. Three years later, the University of Iowa was founded in Iowa City as the first coeducational state university. After the Civil War, coeducation began spreading across the United States as women began replacing men in the teaching profession and attended training institutes with men to obtain teaching credentials.

Although coeducation had spread into primary and secondary public schools by the beginning of World War I, it remained the exception in higher education until after World War II, when public colleges and universities merged women's and men's colleges for budgetary reasons. Gifted women were admitted into graduate programs at the turn of the century, yet most private colleges and universities did not become truly coeducational until the late 1960s and early 1970s. The last barriers to coeducation fell with the acceptance of women into the U.S. service academies and the passage of laws banning gender discrimination in education. By 2006, there were fewer than 50 single-sex colleges in the United States—35 women's schools and five men's schools—but about 30 of the women's colleges admit some men and, in the legal sense at least, are coeducational. (See also COLLEGE).

Ironically, many of the women's rights groups that pressed for coeducation did an about-face in the early 1990s, after a series of studies found that girls often fare substantially worse academically in coeducational settings than they do in single-sex classrooms. Girls, for example, score an average of 50 points lower than boys on the mathematics portion of the College Board SCHOLASTIC ASSESSMENT TEST. A study of higher education found that the most successful women tend to be graduates of single-sex colleges. As a result, some private schools and colleges established single-sex classes within the coeducational social structure. Some public schools have followed suit, and the federal courts have ruled that such classes do not constitute gender discrimination as long as they do not specifically bar male students.

(See also SINGLE-SEX EDUCATION.)

Coffman, Lotus Delta (1875–1938) American educator and pioneer of adult education and education of gifted children. As president of the University of Minnesota in 1932, Coffman founded the landmark GENERAL COLLEGE OF THE UNIVERSITY OF MINNESOTA, which was the precursor of today's community colleges and began the democratization of higher education in the United States. Believing that popularizing learning was the only sure foundation of democratic government, Coffman established the General College to extend higher education to all the people of his state. Coffman's two-year General College admitted all students, although it assigned them to classes according to their abilities as measured by tests and grades. The curriculum, which led to a special, two-year degree, consisted of short, interdisciplinary survey courses in 10 "areas of human living"—the arts, history and government, contemporary affairs, economics, human biology, physical science, psychology, social problems, home and family life and literature, speech and writing.

The college opened with 461 students in the autumn of 1932 and quickly grew to more than 1,000. Although criticized by conservative university faculty members for its "watered down curriculum," the General College became a model for similar schools of general studies at Oregon, Georgia and Washington. Coffman's concept not only continued to thrive, it spread to virtually all state and many private universities after World War II. Coffman was president at Minnesota from 1920 until his death in 1938. During that time, he established many new, model, higher-education programs, including a college for gifted students, an institute of child welfare, an institute of technology, a fine arts department with an art gallery, a school of journalism and a graduate school of business. In addition to his work as a leader in education, Coffman was a prolific author of educational works. He coauthored one of the first textbooks on the teaching of reading and two on the teaching of arithmetic. His works included *Reading in Public Schools* (with T. H. Briggs, 1908); *How to Teach Arithmetic* (with J. C. Brown, 1913); *The Supervision of Arithmetic* (with W. A. Jessup, 1915); *The Social Composition of the Teaching Population* (1911); and *The State University: Its Work and Problems* (1934).

cognition The process by which humans absorb and understand new information. Often called high-level or critical thinking, cognition is defined differently by different learning theorists, but it is, in effect, the "figuring-out" process that takes place between the reception of a stimulus and the subject's response. Put another way, cognition is the process that allows human beings to give meaning to what their senses detect.

Cognition varies widely from person to person. Few individuals give exactly the same meanings or respond exactly the same way to the same stimuli. Cognition varies according to genetic factors, previous experiences, age, devel-

opment and a wide range of other factors. These variations dictate why students at one age can easily understand concepts they were unable to grasp at a younger age. Because cognition often requires accumulating large numbers of small bits of information over an extended period of time, it is a process that can frustrate some teachers and parents because of the patience required to produce the desired results. Many teachers and parents are more receptive to behavioral theories that tie learning to rewards and punishments. Indeed, the traditional pedagogy of centuries past called for striking a child's hand with a ruler until the child provided the correct answer to a problem. In effect, the child was punished for each wrong answer ($2 + 2 = 3$) and rewarded (sometimes only by the cessation of pain) for the correct answer. There is little evidence, however, that such learning produced any understanding of the associated concepts, for example, that two bushels added to a bin with two other bushels yield four bushels or that subtraction and addition are inversely related.

Swiss psychologist JEAN PIAGET explained cognition through the concept of *equilibration*, which involved three basic elements that he called *schemes*, *assimilation* and *accommodation*. Schemes refer to the mental or intellectual framework a student brings to a learning situation. Based on previous learning experiences, schemes allow students to acquire new knowledge that automatically expands or alters the shape of those schemes. Thus, a child with a scheme, or conceptual structure, associated with the word "house," for example, may at first only have knowledge of his or her own house. Each time the child visits or sees a new house, however, the new sensory information expands and alters the original scheme. Once told that igloos or tepees are also houses, the child begins to learn that any houselike structure is probably a house, regardless of its color or shape. Cognitive learning, or equilibration, has taken place. Piaget

called the addition of each new bit of information to a scheme (for example, that igloo equals house) *assimilation*, and he called the altering of the scheme to produce knowledge and understanding *accommodation*. Piaget pointed out, however, that schemes are in a constant state of change in normal children, fluctuating from a state of disequilibrium to equilibrium. Thus, the child whose scheme of a house includes tepees and igloos may be thrown into disequilibrium when confronted with a geodesic dome. When provided with enough added information (assimilation) to understand that the dome is another type of house, the original scheme expands to accommodate the new knowledge, and the scheme is once again returned to temporary equilibrium. One educator described equilibrium as the "that makes sense" response of a student whose eyes light up at a moment of complete understanding. Cognitive psychologists contend that conventional teaching relies too heavily on assimilative techniques that require students to memorize facts without accommodating or understanding their broader meaning. Students may accurately repeat such facts on tests, but without accommodation, they quickly forget them.

cognitive domain Any and all physical, emotional and intellectual activity that permits a human to absorb and understand new information. The cognitive domain includes a wide range of "intelligences," or intellectual abilities, among them problem solving, analytical and critical thinking, creative thinking, mathematical abilities, visual-spatial intelligence and language skills. BENJAMIN BLOOM classified the elements of the cognitive domain as knowledge, comprehension, application, analysis, synthesis and evaluation.

cognitive style The specific method for absorbing and understanding new information used by a specific individual during a specific

stage of development in his or her life. Cognitive style is the way a person thinks and acquires new knowledge, and it will change as the person matures. Thus, the cognitive style of a six-year-old student will differ radically from that of a 12-year-old, and teachers must be aware of these differing cognitive styles and the various stages of development. Swiss psychologist JEAN PIAGET defined four stages of cognitive development: sensorimotor (birth to 18 to 24 months old), preoperational (18 to 24 months to 6 to 7 years old), concrete operational (6 to 7 years old to 11 to 12 years old) and formal operational (11 to 12 years old to adult). Other psychologists have described various developmental stages of cognition as including development of perception, memory, generation and testing of hypotheses and evaluative abilities.

Coleman report Commonly used name for the 1966 landmark study *Equality of Educational Opportunity*, by a team headed by educator-sociologist James S. Coleman, then of Johns Hopkins University, and Ernest Q. Campbell, of Vanderbilt University. Together with a related CIVIL RIGHTS COMMISSION report, the Coleman report was instrumental in redirecting the focus of the civil rights movement from de jure segregation to de facto segregation. Title IV of the CIVIL RIGHTS ACT OF 1964 called for a survey “concerning the lack of availability of equal educational opportunity by reason of race, color, religion, or national origin in public educational institutions at all levels. . . .” The following year, Coleman and his colleagues studied 600,000 children at 4,000 schools. What he found was that most American children attended schools where children of their own race constituted the majority, but that there was relatively little difference in the quality of schooling between white and minority schools. Although white schools tended to have slightly better physical plants, all other measures of “input”—teacher training, teacher

salaries, curriculum, and so on—were relatively equal. The results, however, were not. The report found that the academic achievement of minority children was one to two years behind that of whites in first grade and three to five years behind in the twelfth grade. The report concluded that academic achievement was, therefore, related to family background in the early years, but that going to school not only did nothing to correct the academic differences between whites and blacks, it actually allowed those differences to widen.

A year later, the Civil Rights Commission conducted another study entitled *Racial Isolation in the Public Schools*, which confirmed the Coleman report findings. Together, the two studies changed federal government policy on race and education. From a policy of eliminating de jure, or legal segregation, Washington now embarked on a policy of affirmative action to integrate schools and end de facto segregation produced by income level and neighborhood racial or ethnic composition. The new policy added special COMPENSATORY EDUCATION at racially isolated schools, to close the educational gaps between children of different races. A second result of the new policy was the busing of school children to schools outside their own neighborhoods to try to prevent black enrollment at every school from ever exceeding 60%. The courts later upheld the legal validity of the new policy and made it illegal for any district to allow black enrollment to exceed 85% in any school. Nevertheless, in 2000 about two-thirds of all black children continue to attend public schools whose student bodies are 50% to 100% nonwhite and one-third attended schools with fewer than 10% whites in attendance—largely because of the failure of housing integration in major cities.

college A uniquely American, two- or four-year, degree-granting institution of postsecondary school education offering, respectively,

ASSOCIATE and BACHELOR'S DEGREES in either the arts or sciences. Unlike British and European educational systems, which grant students a baccalaureate after they complete secondary school, the American college spreads the secondary-school curriculum over two additional years, allowing American students time to participate in organized sports and recreational programs that are not part of school or university curricula in other countries. The last two years of American colleges, when students "major," or concentrate their studies in a single subject or related subject areas, are equivalent to the first year of the British and European university model, where students study or "read" in only one area for several years to earn their master's degrees and/or doctorates.

Derived from the Latin *collegium*, or "society," college originally referred to a society of clergymen who lived and studied Scripture together. Colleges evolved from the early medieval universities that developed in western Europe during the 12th and 13th centuries. With Latin as the universal tongue of churchmen and scholars, universities attracted students from across Europe, regardless of each student's native tongue. Nevertheless, students tended to congregate and share living quarters, or *collegia*, on the basis of common nationality.

Although western European universities had introduced secular studies by the time settlers arrived in the New World, the first colleges in the American colonies reverted to the older tradition of a college as a society of clergymen. Calvinists founded the first colleges in the New England colonies as seminaries for training ministers, missionaries and teachers of the gospel. HARVARD was first, in 1636, followed by YALE, in 1701. Students seeking to pursue secular studies were forced to travel to universities in Scotland, England, Holland, France and Italy, if they could afford to do so. With the industrial revolution and the rapid expansion of the U.S. economy, however, colonial Ameri-

can colleges introduced practical, secular education in the middle of the 18th century, and the concept of the modern American college slowly began to evolve.

Because of the backwardness of isolated rural schools and the absence of national standards of primary and secondary education, students with widely differing academic skills found themselves entering colleges at the same time, but unable to cope with the work. Colleges were forced to teach basic courses in English, mathematics, history, foreign languages and science that were (and still are) usually taught in secondary schools in the Old World. After the Civil War, the concept of the American university began evolving, largely for financial reasons. It proved more economical for colleges to merge administrative facilities with nearby medical schools, law schools and other schools of graduate studies. Although some colleges continue to function independently, most American colleges are now part of larger, all-encompassing universities.

ENROLLMENT

A booming economy sent total enrollment in institutions of higher learning climbing 6.4% in the 1980s and 7.74% in the 1990s. By 2006, college enrollment had climbed to more than 17 million men and women, and the total was expected to reach nearly 19 million by 2010. Two-thirds of all public high school graduates and 90% of private high school graduates continue their education at college. More than 75% attend public colleges—60% in four-year schools and the rest in two-year colleges. There are about 4,200 degree-granting colleges in the United States, of which only about 1,700 are public. Of the 2,364 four-year colleges in 2002, only 612 were public, and the rest were private (248 of them for-profit). The reverse was true of two-year colleges, however: About 1,100 of them were public and only were 730 private

institutions, of which 560 were for-profit organizations. The latter represented the fastest-growing segment of the higher-education industry because of its focus on instruction in computer-oriented functions and technology. All but 14 American colleges are coeducational, although 51 others that are coeducational in the legal sense remain primarily for women.

Women make up nearly 58% of total college enrollment. Minorities make up 33% and foreign students 3.5%. Although only 54.4% of students at four-year colleges earn degrees, the completion rate may not be as poor as it seems at first glance. Just over 4% of college students attend part time, nearly 3% of enrollees earn certificates, and about 4% earn associate degrees. Together, these three groups indicate that a considerable albeit undetermined number of students enroll in college only to obtain job-enhancing skills or satisfy a particular interest in a subject area and do not intend to obtain a conventional degree. Nor do low completion rates take into account students who leave college to take advantage of lucrative job opportunities in areas not requiring a degree. Aside from sports and the arts, technology firms provide many opportunities for skilled young men and women without college degrees.

The figures for degree completion rates are even less revealing at two-year colleges geared to offer career-oriented courses that prepare students for direct entry into the workplace after they complete their studies. Large, though undocumented numbers of students enroll in a single course at two-year colleges to enhance job or recreation skills without any intention of obtaining certificates of completion or associate degrees. More than 50% of enrollees at two-year colleges are 30 or older, and only 27% of enrollees obtain degrees.

The low completion rate at four-year colleges, however, remains a center of controversy, given the rising costs of attending. With the vast majority of public colleges admitting stu-

dents on an open-enrollment basis and, indeed, encouraging a “college-for-all” approach to education, millions of students are enrolling—and colleges are accepting them—indiscriminately, without regard to whether their talents may lie outside the academic area. The result has been disastrous for minorities and the disadvantaged, whom colleges lure onto their campuses with promises of the wealth associated with college degrees. American Indians and African Americans have drop-out rates of about 60% each, Latinos 53%, and the disadvantaged 70%. The Department of Education’s National Assessment of Adult Literacy in 2003 found that fewer than one-third of college graduates tested were able to read complex English texts and draw complicated inferences, and, given the soaring, exorbitantly high costs of attending college, a growing chorus of critics is demanding the development of a nationwide system of assessing higher education by standardized testing of college students, using the COLLEGE LEARNING ASSESSMENT TEST developed by the Council for Aid to Education, a former division of Rand Corporation. (See COMMISSION ON THE FUTURE OF HIGHER EDUCATION.)

COSTS

Some 82% of all college students attend institutions in their home states, where costs of tuition, room, board, books and required fees at four-year public institutions in the 2005–06 academic year averaged \$15,600. The average cost for students from other states is approaching \$25,000. Although costs of attending private four-year colleges averaged \$32,000, the costs at most highly selective private colleges are now \$45,000 and approaching \$50,000.

With college costs rising 5% to 10% a year, the U.S. Department of Education estimates that nearly 200,000 qualified students a year can no longer afford community colleges, let alone four-year colleges. Freshmen from the wealthiest 25%

of American families now fill 55% of the seats in the 250 most selective colleges, public and private. At Harvard, where the median family income of undergraduates is about \$150,000, the director of admissions laments the “huge waste of talent” that results from the inability of low-income students to afford college.

Ironically, receipts from tuition, fees and other student payments seldom cover more than 75% of actual costs of educating, housing and otherwise caring for each enrollee—largely because of ever-increasing faculty and administration salaries and soaring capital costs for ambitious building programs to expand athletic plants, research facilities and income-generating commercial activities. Since 2000, American colleges and universities have been spending more than \$14 billion a year on construction projects—often elaborate student centers and recreational facilities such as sports stadia that critics call the “country clubization” of American universities. The federal government pours between \$25 billion and \$30 billion into research at American colleges and universities each year, and the latter collect more than \$1 billion a year from licenses for the more than 15,000 new drugs, agricultural products, technologies and patented inventions and components that emerge from campus laboratory facilities. In 2004, Johns Hopkins University received \$1.23 billion in federal research and development funds, the universities of Washington more than \$625 million, Stanford University more than \$540 million, University of Michigan more than \$520 million and eight others more than \$400 million each. The top 100 recipient institutions received more than \$22 billion. At public universities, research now accounts for 22.5% of total expenditures, compared with 34% for instruction and only 6% for scholarships. Several decades ago, costs of instruction consumed 39% of university spending—at a time when faculty members spent more time teaching for far lower salaries.

FACULTY

The average full-time college faculty member now spends less than 57% of his or her time teaching—about 26 hours a week. The percentage varies from a low of about 46% (24 hours a week) at public, research-oriented universities to nearly 72% (32 hours a week) at two-year colleges. The rest of the time is spent on research and scholarship (an average of 15% at all institutions), administration (about 14%), nonteaching functions (6.5%), professional growth (4.5%) and outside consulting (3.3%). Depending on *ACADEMIC RANK*, salaries in academic 2005–06 ranged from an average of more than \$130,000 a year for full-time professors at private four-year universities to about \$40,500 for instructors at two-year colleges. Salaries of top administrators were far higher, with the median salary for a college chief executive \$180,000 a year. But five college and university presidents earned more than \$1 million each, nine earned at least \$900,000 each and 50 earned at least \$500,000. The median salary for the director of athletics was \$155,000, general counsel \$130,300, director of student health services (physician) \$128,000, the chief academic officer (usually, a dean) \$127,000, chief business officer about \$124,000, chief investment officer \$121,000 and chief development officer \$115,000. Median salaries of deans ranged from \$62,500 (continuing education) to more than \$325,000 (medicine). Median salaries for deans of seven types of graduate schools—architecture, dentistry, engineering, law, medicine, pharmacy and veterinary medicine—are \$150,000 or more, and dentistry, law and medicine were above \$200,000 each.

Ironically, as faculty salaries have climbed, faculty productivity in the area of instruction has declined. Indeed, a 1999 study at Yale University, which charges more than \$45,000 a year for tuition, room, board and other costs, found that tenured and tenure-track professors accounted for only 30% of the classroom hours

of undergraduate instruction. Graduate students—so-called TEACHING ASSISTANTS (TAs)—and ADJUNCT faculty together handled the remaining 70% of undergraduate instruction. In Yale’s foreign-language departments, TAs and adjuncts handled more than 50% of the instruction. Nationally, about one-third of American college faculty spend at least one a week in consultation with off-campus private clients. TAs and adjuncts teach one-third of all undergraduate courses and 46.2% of introductory courses. TAs now account for nearly 25% of college teaching staffs, while part-time, non-tenured instructors account for 21.5%. Apart from their youth and lack of teaching experience, more than one-third of all TAs are foreign born and often cannot speak English well enough to be understood by their students.

PUBLIC UNIVERSITIES

Soaring costs, declining affordability and dimly low student completion rates have provoked widespread reexamination of state university systems. The most comprehensive studies are issued periodically by the National Center for Public Policy and Higher Education, which issued “report cards” in 2000, 2002 and 2004 and found that 37 state systems were less affordable in 2004 than they had been two years earlier. Moreover, it found that high school graduates were less likely to continue their education by enrolling in college than they had been a decade earlier and that those who do enroll are less likely to complete their studies and earn degrees. The 2004 “report card” for state university systems, with the symbols < and > indicating whether a better or worse grade than in 2002, is on p. 257. *Preparation* refers to academic proficiency of entering freshmen, *participation* refers to the percentage of 18- to 24-year-olds enrolled in college, *affordability* is the percentage of family income required to pay for college costs, *completion*

refers to college graduation rates, and *benefits* measures income differences between those with or without bachelor’s degrees in similar industries.

ACADEMIC QUALITY

Omitted from the Center’s evaluation, however, is educational quality—an almost impossibly difficult characteristic to measure. Many COLLEGE DIRECTORIES rank colleges and universities by the degree of selectivity of their college admissions processes, assuming that the best colleges are those that accept only students with the highest high school academic records and college admissions test scores. Indeed, those colleges may be best for those students. Left unasked and unanswered is which colleges are best for students with average or below-average grades and admissions test scores. Various private and public agencies and services use a wide array of statistics to rank the academic quality of colleges and universities—student demographics (median SAT scores, for example), graduation rates, tuition costs, student-faculty ratios, admissions statistics, doctorates granted and hundreds more numbers that individual colleges can slant in ways to make them all but meaningless in final rankings. Academic testing of college graduates, however, has provoked widespread criticism of the academic quality at American colleges. Only 10% of American college graduates have proficiency in foreign languages (see FOREIGN-LANGUAGE STUDY), while fewer than half of all graduates from four-year colleges exhibit mastery of college-level mathematics and science. Some 55% of college seniors fail tests of basic knowledge of history and literature—a reflection, perhaps, of the motives of many American youngsters for attending college. About 27% had selected their colleges because of low tuition, but nearly one-fourth said they had selected their colleges because of “a good reputation for social activities.” More

	Preparation	Participation	Affordability	Completion	Benefits
Alabama	D-	C>	F	B-<	C+>
Alaska	B-<	C>	F<	F	B>
Arizona	D	B+>	F<	C+	B<
Arkansas	C>	C->	F<	C>	D+>
California	C>	A>	B<	C<	A>
Colorado	A->	B	D-<	B->	A
Connecticut	A	A>	F>	B<	A>
Delaware	C+	C+<	F	A->	A
Florida	C<	C>	F<	A->	B>
Georgia	C>	D>	F<	B	B>
Hawaii	C>	B-	D	C	B>
Idaho	C>	C-	D-<	C+<	C
Illinois	B+	A	D<	B>	B>
Indiana	C>	C+	D<	B>	C
Iowa	B+>	B+	F<	A	C<
Kansas	B	A>	F<	B>	B+>
Kentucky	C-	B->	D-<	C	B>
Louisiana	F	D+>	F<	C>	C>
Maine	B<	B->	F	B	B>
Maryland	A->	A>	F<	B-	A
Massachusetts	A	A	F<	A>	A>
Michigan	C<	B+	F<	C+>	A>
Minnesota	B+>	A>	C-<	B+	A>
Mississippi	D+>	D	F<	B->	C
Missouri	B-	B>	F<	B>	B>
Montana	B+<	C>	F	C	C
Nebraska	B+>	A	F<	B>	B>
Nevada	D	C>	F<	F	C>
New Hampshire	B+>	C+<	F	A	A>
New Mexico	F<	A-<	F<	D	C+>
New York	A>	C+<	F	B+	B>
North Carolina	B<	C+	D-<	B	C>
North Dakota	B	A->	F<	B	C<
Ohio	C+	C+	F	B>	B>
Oklahoma	C->	C<	F<	C-	C+>
Oregon	C	B->	F	C	B
Pennsylvania	B-	B>	F<	A	B>
Rhode Island	C+>	A	F	A	B+<
South Carolina	C>	C-<	F<	B	C
South Dakota	B>	B+>	F	B>	C>
Tennessee	C-	C->	F<	C+	C>
Texas	C+	C>	D<	C>	B>
Utah	A	C+>	C<	B>	B
Vermont	C+<	C<	F	A	B>
Virginia	B+	B-<	D-<	B	A>
Washington	B-	C>	F<	A-	A>
West Virginia	C+	C-	F	C>	D>
Wisconsin	B+<	B	D<	A->	C+
Wyoming	C+>	B>	F<	B+>	D

than 3% enrolled because they had “nothing better to do,” and 40% admitted they were “bored” in college classes.

More than 70%, however, said they had enrolled to “get training for specific careers, get a better job and earn more money.” Most seemed aware that a college degree generates higher wages. (Median annual earnings for workers 25 years old or over with bachelor’s degrees was \$51,272 in 2004, compared with \$29,848 for those with only a high school diploma—a difference of more than \$21,400 a year.) By far the most sought-after degree at four-year institutions is the bachelor’s degree in business and management. Indeed, more than 21% of all bachelor’s degrees awarded in academic year 2002 were in business and management (276,445), and degrees in the social sciences (history, political science, economics, psychology, sociology) ranked a distant second (111,639, or 8.64%). Education ranked third, with more than 106,000 degrees awarded (8.2%); psychology, fourth, with nearly 6%; engineering, fifth (5.7%); and health-related fields, sixth (5.5%).

FACILITIES

Many but not all two- and four-year colleges provide on-campus residential facilities for students. Most, though again not all, also provide facilities for recreation, extracurricular activities and intramural and intercollegiate sports. Extracurricular activities may include student-run radio or television stations; student newspapers, magazines and other periodicals; student theaters, drama societies and performing groups; student orchestras, chamber music groups and bands; glee clubs, choral societies and other singing groups; a political union to debate national and international issues; a student government organization to help govern student life; one or more community service organizations for charitable activities; religious

societies; and a wide range of special-interest “clubs” for students with hobbies and interests such as chess, photography or numismatics.

Depending on the size and wealth of the institution and degree of student and alumni interest, athletic activities may run the gamut of sports and include intramural sports as well as intercollegiate team competition for every level of ability, with as many as four teams in some sports. Among the sports most commonly offered at some institutions are baseball, basketball, cycling, cross country running, diving, equestrian sports, field hockey, football, golf, gymnastics, ice hockey, lacrosse, martial arts, paddle tennis, sailing, skiing, soccer, softball, squash, swimming, tennis, track and field, volleyball and wrestling. Facilities at larger colleges may include indoor basketball and hockey arenas, football stadia, outdoor playing fields, tennis courts and huge, multi-story athletic complexes with swimming and diving pools, basketball and squash courts, indoor tracks, wrestling rooms, dance studios, weight-training rooms and gymnasias.

OUTCOMES

Following passage of the Civil Rights Act of 1964, public colleges that had formerly discriminated on the basis of race ended such practices. Every state system of higher education must now admit every high school graduate to some level of college, according to his or her academic qualification. According to the ACT, however, only 21% of students taking the ACTs have the skills they need to succeed at any college level in the four disciplines measured by college admissions tests. Only 68% of those taking the ACT English test scored what ACT calls its benchmark level—that is, the skill level at which, according to statistical studies, a student has a 70% chance of earning a C or better at college. Only 51% of test takers have the reading skills they need to succeed in col-

lege, and fewer than 25% are prepared for college-level science and math courses. In fact, only 65% of students who enroll in American four-year colleges go on to earn a degree. To help academically inadequate students cope with college-level education, therefore, all public and many private colleges offer some form of COMPENSATORY EDUCATION to provide remediation and tutoring. Critics contend that it is not the function of a college to provide remediation that is normally the function of primary and secondary schools and, indeed, that diversion of college resources into remediation of students who are academically unprepared for college not only deprives academically qualified students of the higher-level education that colleges should be providing but also dilutes, distorts and destroys the very *raison d'être* of higher education.

(See also *ACADEMIC RANK*; *BLOOM, ALLAN*; *COLLEGE ADMISSIONS*; *TUITION*.)

college, preparation for Most two-year and almost all four-year colleges require a high school diploma, GED or equivalent for admission, although enrollment in noncredit courses at some schools may be open to all. The most selective four-year colleges require four years of high school English, three or four years each of mathematics and foreign languages and three years each of science and history or social studies. Somewhat less selective schools also require four years of English, but only three years of mathematics and two each in history or social studies, science and a foreign language. Even the least selective colleges require at least 15 academic units, or *CARNEGIE UNITS*, including 3 in English, 2 each in mathematics, science and social studies and the remaining 6 in electives. Qualifying grade point averages vary according to college selectivity. Most four-year colleges require applicants to take either one or both of the *SCHOLASTIC ASSESSMENT TESTS* or the *ACT ASSESSMENT PROGRAM* tests. As with high school

grade point averages, qualifying tests scores vary according to the selectivity of the individual college. Only about 40% of all students who graduate from high school are academically prepared for college and only 20% of all black and Hispanic students are. About 68% of those taking the ACT English test scored what ACT calls its benchmark level, the skill level of a future C student or better. Only 51% of test takers have the reading skills they need to succeed in college, and fewer than 25% are prepared for college-level science and math courses. In fact, only 65% of students who enroll in American four-year colleges earn a degree.

college admissions The process by which students apply to and get into college. For almost all two-year colleges and the majority of four-year colleges, admission is all but automatic for students with high school diplomas. The process requires filling out a simple application form. All but about 150 to 200 of America's nearly 2,400 four-year colleges accept 50% to 100% of their applicants. State laws require most public higher-education systems to accept all high school graduates into at least a two-year, if not a four-year, college. Although United States college-entry rates are the world's highest—nearly 66% of all high school graduates—the drop-out, or noncompletion, rate is 44%. Of the 150 academically selective colleges with stringent admissions requirements and resultant drop-out rates of less than 2%, many are professional schools (the military academies, engineering schools, schools of music or art, etc.), which base their admission requirements on talent and special interest as well as the student's previous academic record. In many cases, such colleges require auditions, portfolio presentation or some other demonstration or evidence of exceptional competence for admission.

Admissions into nonspecialized selective four-year colleges is a far more complex process,

by which colleges attempt to screen students and admit only those who will benefit most from the education, atmosphere and particular way of life at that college. The goal is not to keep students out but to admit those best suited to each college.

Selective colleges base their admissions decisions on a combination of academic and personal achievement. With a dozen or more applicants for every available seat, selective colleges consider a wide range of factors before deciding which applicants to accept. Secondary school grades are by far the most important of these, although course quality is a mitigating factor in weighing the value of any grade. Thus, a B+ in an advanced "honors" course in a subject would probably weigh more than, say, an A in the less advanced course in that subject.

The number of honors and ADVANCED PLACEMENT courses is another factor in the admissions process, as is class ranking. Scores on SCHOLASTIC ASSESSMENT TESTS, Advanced Placement tests and ACTS are other factors, although many four-year colleges do not require such tests, and some state universities automatically admit all students who finish in the top decile or quintile of their high school graduating classes. Also taken into consideration are a student's extracurricular activities, both in and out of school, and the student's summer jobs. Colleges also try to obtain some measure of each applicant's character. Often this may be evident in the teacher and school recommendation forms that are required with each application.

The application itself is another major factor in the admissions process. Many applications ask students for one or more carefully thought-out essays that reveal their personalities by detailing some deeply personal aspects of their personal lives, experiences, interests, attitudes or feelings. Some colleges also require a personal interview with the student, conducted either on the college campus by an admissions or faculty representative or off cam-

pus by an alumnus/a or other representative of the college.

Beyond these, there are a half-dozen other factors in the college admissions process that are usually beyond the applicant's control, but can affect the chances for admission. All other factors being equal, sons and daughters of loyal alumni have a better chance of gaining admission to a selective college than other applicants, as do children of major financial contributors. Gifted, world-class scholars and athletes also have advantages in the admissions process, and many colleges also give an advantage to members of underrepresented minorities and residents of underrepresented geographic areas.

Almost 70% of college applicants gain admission to the college of their first choice—largely because most four-year colleges have open-enrollment policies. More than 21% of college applicants gain admission to their second-choice colleges and 5.8% to their third choice, and only 3.3% had to settle for their fourth choice or lower. More than 75% of freshmen admitted in 2005 were white, nearly 10% black, nearly 8% Asian, and 7% Latino.

(See also AFFIRMATIVE ACTION; SELECTION AIDS FOR COLLEGES AND SCHOOLS.)

college advisor A high school faculty member trained to help prospective college applicants select colleges best suited to their personalities, talents and academic and social skills. A full-time position in many private schools, the college advisor is usually a member of the guidance staff at most public high schools. In addition to reviewing each student's qualifications, the college advisor helps students assess personal needs and preferences and the appropriateness of each college for the particular student.

Among the factors the advisor helps students consider are: whether to select a preprofessional or a classical education; a large university or small college, in the city, suburbs or country; a coeducational or single-sex school; a day or boarding college; on- or off-campus

living quarters; distance from home; academic and extracurricular opportunities; the social life; and the academic demands of the school and whether the student can meet them.

Another advisor responsibility is to give students access to a variety of college selection aids, including college directories and individual college brochures, catalogues, profiles, video cassettes and descriptive materials. Advisors also arrange for high school visits by college representatives and student visits to colleges. Advisors also help students arrange to take the standardized College Board and American College Testing college admissions tests, and they often provide students with guidance in obtaining and completing college admissions and financial aid applications.

college applications The printed or electronic forms students must fill out as part of the COLLEGE ADMISSIONS process. On-screen applications are identical in appearance to printed forms, but permit automatic insertion of frequently repeated data and allow e-mailing of finished forms to as many colleges as the student selects. Application forms and financial aid forms are available from individual college and university Web sites and from Web sites of organizations such as the COLLEGE ENTRANCE EXAMINATION BOARD and publishers of COLLEGE DIRECTORIES. Applications for admission to the vast majority of colleges range from simple forms requiring little more than the student's name, address and social security number, to complex documents requiring several carefully constructed essays. Most fall somewhere in between and are usually divided into eight parts covering personal data, educational data, admissions test results, family information, extracurricular activities, work experience and a personal statement.

The personal data section includes the student's name, address, telephone number, gender, date of birth, the school term for which the stu-

dent is applying, subject area of greatest interest, career or professional plans and financial aid requirements. The educational data section asks for the name, address and telephone number of the student's current high school, the name of the college advisor, the name of all other high schools the student may have attended and a list of all academic honors and awards. The test information section asks the student to list all college admissions tests (SATs, APs, ACTs) he or she has taken or plans to take. The family information section asks for the names, occupations and higher education of the student's parents and the names of any relatives who attended the college to which the student is applying (see also LEGACY). The student is then asked to list all in-school and out-of-school cocurricular (nonacademic) activities, including hobbies and family activities and the jobs the student has held. Some colleges ask gifted students to support their applications with additional materials, such as copies of art portfolios, tapes of singing or instrumental performances, copies of special awards, and so on.

Finally, many applications—especially for the most selective colleges—ask the student to write at least one essay, or personal statement, that displays elements of the student's personality not evident from the data listed elsewhere in the application or available directly from the student's school. As one application puts it, "The personal statement helps us to become acquainted with you in ways different from course grades, test scores and other objective data. It enables you to demonstrate your ability to organize thoughts and express yourself. Please write an essay about one of the following topics: (1) Evaluate a significant experience or achievement that has special meaning to you; (2) Discuss some issue of personal, local or national concern and its importance to you; (3) Indicate a person who has had a significant influence on you, and describe that influence."

In addition to the documents that the student must complete, forms are enclosed for

recommendations from one or two teachers and for the college advisor on behalf of the school itself. These forms ask for evaluations of the student's personality, creativity, motivation, intellect, academic achievement, ability to write and discuss ideas, self-discipline and potential. The college advisor is also expected to send a transcript of the student's high school grades with the application.

Many applications are so similar that about 200 selective colleges and universities now accept a COMMON APPLICATION, prepared by the National Association of Secondary School Principals. Available from high school guidance counselors, the Common Application permits a student to fill out one form and send photocopies to any of the participating colleges listed on the form. In addition to hard-copy applications, almost all colleges offer applications on computer disks, by e-mail, or over the Internet, and some colleges even waive application fees for applicants who file electronically and eliminate the costs to the colleges of handling paperwork.

College Blue Book, The A five-volume directory available in print or online giving complete descriptions of about 3,000 U.S. and Canadian colleges. Volume I describes facilities, admissions procedures, costs, etc., while Volume II provides all data about each college in tabular form. Volume III cross-references all college courses, majors and degrees with colleges offering them, while Volume IV cross references about 1,000 occupational and professional categories with 8,000 business, trade and technical schools. Volume V lists more than 2,000 sources of scholarships, fellowships and grants.

College Board See COLLEGE ENTRANCE EXAMINATION BOARD.

College Cost and Financial Aid Handbook An annual volume published by the College Entrance Examination Board outlining

most major financial aid programs available to students bound for or already in colleges and universities. It is available in print and online.

college credit A unit for measuring the amount of successfully completed academic work in higher education. The method for measuring credits and the number of credits required for a degree vary widely from college to college. Credits are usually measured, however, on the basis of a combination of classroom (credit) hours for each course and the level of the course work.

Typically, the successful completion of work in a course that meets three hours weekly for a 15-week semester earns a student one credit toward graduation. An upper-level seminar that meets only twice a week, however, might also earn a full credit, while a science course with several hours a week of laboratory in addition to classroom work might earn more than one credit, as would a required thesis. Some colleges award college credits for work experience, life experiences, published works, and scores on college admissions and placement tests.

In general, students must complete 60 semester hours, for about 20 credits, for an associate degree; 78 to 128 semester hours, or 26 to 40 credits for a bachelor's degree; 30 to 40 graduate semester hours, for about 30 credits, for a master's degree; and 70 to 100 total graduate semester hours (including those spent earning a master's degree) for the 60 or more credits required for a doctoral degree.

college directories Publications and Web sites that list, describe, categorize, evaluate and rank American colleges. Available in print and online for both two-year and four-year colleges, college directories range from the objective to the frivolous. Among the most widely used by college advisors are *Barron's Profiles of American Colleges*, *College Admissions Data Handbook*, *The COLLEGE BLUE BOOK*, *The College Board's College*

Handbook and *College Cost and Financial Aid Handbook*, *Peterson's Annual Guide to Undergraduate Study—Four-Year Colleges*, *Peterson's Guide to Two-Year Colleges*, and *Peterson's Guide to Vocational and Technical Schools* (Eastern and Western editions; see PETERSON'S). The NATIONAL COLLEGIATE ATHLETIC ASSOCIATION maintains a Web site for athletes listing graduation rates by year and sport, along with revenues and expenses of teams and gender and race of coaches.

The federal and many state governments also maintain Web sites on colleges. The federal College Opportunities On-Line lists demographics of enrollees, costs, largest academic programs and graduation rates. The Department of Education provides information on financial aid, and state boards of education also maintain sites with data that varies widely from state to state. Google provides the Web sites for each state. Florida's Web site, for example, provides campus-by-campus comparisons of universities in Florida, with degrees awarded, tuition, student demographics and postgraduate job and salary outcomes. The Texas Higher Education Coordinating Board site provides enrollment projections, faculty ages and salaries, size of libraries, state appropriations for each institution and so on.

Typically, directories provide a 2,000-word profile of each institution, including a brief history and description of the college, its size and physical plant, student life and housing and dining facilities, the various extracurricular activities and sports, facilities for the disabled and other students with special needs, counseling services, campus safety and security, programs of study and degrees offered, graduation requirements, admissions requirements and a profile of the average student (SAT scores, high school class ranking, and so on), available financial aid, special facilities and all other information a prospective applicant might need or want. In addition, some directories provide bundled software that matches student career or study interests with appropriate institutions. The Col-

lege Board's *College Explorer* (bundled with *The College Handbook*), for example, permits students to enter their personal selection criteria, after which the software automatically calls up the list of colleges that match those criteria. The student can then call up a full profile of any given college at any time, generate e-mail letters of inquiry to any of the schools or fill out appropriate applications and financial aid and scholarship application forms for e-mailing to each school. Peterson's produces similar software called *Peterson's Interactive*, which is bundled with its guide to four-year colleges. In addition to publishers, a number of nonpublishers have Web sites offering similar search engines.

Most directories also provide some form of college evaluation or rank, based on the ratio of admittances to applicants and average or range of SAT scores and high school class rank of students admitted. Many colleges, however, question the accuracy of directory rankings, contending that they fail to take into account the needs of individual students and the ability of each college to meet those particular needs. Moreover, there are no audits to confirm the accuracy of directory data, which are provided by the colleges themselves. Still another element that can taint the value and validity of directories is the practice of inviting colleges and universities to pay fees—often thousands of dollars—for inclusion of materials about their facilities. Most directories make no mention of that fact to their readers.

College Entrance Examination Board A nonprofit association of more than 2,400 educational institutions that develops standardized college admissions tests. The College Board also maintains a for-profit subsidiary with a full-service Web site that caters to the college applicant's every need, including college applications, financial aid forms, scholarship applications, college counseling and selection, college profiles, tutoring programs for the Scholastic Assessment Tests

and Advanced Placement Tests, and on-line registration for all SAT and AP tests. Founded in 1900 to assist college-bound high school students, the College Board, as it is popularly known, is responsible for College Board Admission Testing Program, which consists of four batteries of tests: the PRELIMINARY SCHOLASTIC APTITUDE TEST/NATIONAL MERIT SCHOLARSHIP Qualifying Test; the SCHOLASTIC ASSESSMENT TEST-I; the Scholastic Assessment Test II; and ADVANCED PLACEMENT Examinations. The National Merit Scholarship Qualifying Test is required for students applying for National Merit Scholarships, while most selective colleges in the United States require one or both of the Scholastic Assessment Tests as part of their admissions processes. The Advanced Placement Tests allow students to earn college credits for work done in special college-level high school courses. The board is also responsible for the COLLEGE LEVEL EXAMINATION PROGRAM, which allows college students to obtain advanced placement at college, and the College Scholarship Service, which helps students apply for and obtain financial aid to pay for college. Based in New York City, the College Board publishes *The College Handbook*, a directory of colleges.

college funding The provision of monies for operating an institution of higher learning. Generally, colleges obtain funds from students, investments, sales and services, private gifts, grants and contracts, and federal, state and local governments. The proportion of funds from each of these sources varies widely, depending on whether the college or university is public or private. The approximate percentage breakdowns of revenue sources for public and private institutions are as follows:

Revenue Source	Public	Private
Student tuition and fees	18.1	38.0
Federal government	11.2	16.3
Appropriations	1.0	NA

Grants and contracts	9.7	NA
Research and development centers	0.5	NA
State governments	35.6	1.4
Appropriations	31.9	NA
Grants and contracts	3.8	NA
Local governments	4.0	0.6
Appropriations	3.2	NA
Grants and contracts	0.8	NA
Private gifts, grants and contracts	5.1	19.4
Endowment Income	0.8	9.3
Sales and services	21.7	23.6
Educational activities	2.8	4.2
Auxiliary enterprises (ticket sales, licensing income, etc.)	9.3	10.7
Hospitals	9.5	8.7
Other	3.7	5.1

Source: U.S. Department of Education

College and university revenues soared to about \$260 billion at the beginning of the 21st century; more than 68% went to public institutions and the rest to private nonprofit institutions, and both sectors scrambled to obtain an ever-widening share of private gifts. The value of such gifts soared to nearly \$26 billion in the 2004–05 academic year, following a healthy rebound in stock market prices. Total private giving a decade earlier had been about \$10 billion, and a decade before that less than \$2 billion. Alumni provided nearly 28% of private gifts in 2004–05, while other individuals accounted for 19.5%; FOUNDATIONS, 27.3%; corporations, 17.2%; miscellaneous sources, 6.8%; and religious organizations, 1.4%. More than 74% of private giving went to research institutions, 55% to public universities and the rest to private universities. Colleges offering only bachelor's or master's degrees received about 22% of all gifts, the vast majority of which was earmarked for private institutions. Specialized institutions of higher education received about 3.3% of total giving, while two-year colleges—almost all of them public—received less than 1%.

(See also ENDOWMENT; STATE EDUCATIONAL SUPPORT.)

College Learning Assessment Test (CLAT)

A standardized test to measure educational outcomes of college students at graduation. Made up of essay questions and complex problems, CLAT was developed by the Council for Aid to Education, a former division of Rand Corporation, in response to growing demands that colleges measure and account for the education they impart to students. While annual costs of attending some colleges have ballooned to \$45,000 or more per student, GRADUATION RATES remain barely above 50% on average, with minority groups dropping out at rates of 60% to 70%. Moreover, the Department of Education's National Assessment of Adult Literacy in 2003 found less than one-third of those tested able to read complex English texts and draw complicated inferences.

(See also COMMISSION ON THE FUTURE OF HIGHER EDUCATION.)

College Level Examination Program (CLEP)

A College Entrance Examination Board program of 90-minute computer-administered tests that allows students to earn college credits and advanced placement in a wide range of subjects at 2,900 colleges. Unlike the more demanding ADVANCED PLACEMENT PROGRAM designed for academically gifted high school students, CLEP is designed to determine the appropriate course levels for adults and former students reentering college. CLEP holds monthly examinations at 1,300 test sites across the United States and overseas. General tests are offered in five broad arts areas (English composition, mathematics, natural sciences, social sciences and humanities). Specific tests are offered in any of about three dozen subjects. Many of the latter are subsidiary areas of the five liberal arts (calculus, for example, in mathematics), but they also include such foreign languages as German, French and Spanish; technical subjects such as nursing, medical technology and dental auxiliary education; and various subjects in education and business.

college of education A degree-granting institution of higher learning specializing in the training of teachers, school administrators and other professionals in the field of education. The college of education is usually a separate college within a university complex. Most such colleges evolved from the NORMAL SCHOOLS of the 19th century and the teachers colleges that replaced them at the beginning of the 20th century. Colleges of education generally offer degrees at both the undergraduate and graduate levels. Although there are more than 750 members of the American Association of Colleges for Teacher Education, only about 600 are accredited by the National Council for the Accreditation of Teacher Education.

College of New Jersey Predecessor institution of PRINCETON UNIVERSITY. The college was founded in 1746 by the New Light Synod of New York, following a split between orthodox and liberal leaders of the then-dominant Presbyterian church. New Light devotees, or popularists, had split with Old Light Calvinists over such issues as the rights of congregations and pastoral powers and the then-raging issue of epistemology, or the theory of knowledge. Scotsmen all, Old Light Presbyterians believed only in the reality of God and the Scriptures and, like philosopher David Hume, denied the objective value of reasoning based on human senses. New Light Presbyterians were adherents of the Scottish "school of common sense," a philosophy best articulated by Thomas Reid, who believed in the validity of judgments based on man's senses. His supporters favored extension of the traditional, religiously oriented curriculum of "moral philosophy" to include the sciences, or natural philosophy. (See also NEW LIGHT-OLD LIGHT CONTROVERSY.)

The debate provoked seven New Light Presbyterians (four ministers and three laymen) to found the College of New Jersey to

train young men as New Light ministers. Later they expanded their mission to include the education of men for other learned professions. They obtained a charter in 1746, and the college opened a year later in the Elizabethtown (now Elizabeth) parsonage of JONATHAN DICKINSON, who became the college's first president and teacher. It eventually moved to the parsonage of AARON BURR, SR., in Newark and, about 10 years later, to Nassau Hall, in Princeton, where Dickinson, Burr, JONATHAN EDWARDS, Samuel Davis and Samuel Finley made it the center of evangelistic New Light Presbyterian studies.

After Finley's death in 1766, the trustees named Scottish minister JOHN WITHERSPOON president, and he reorganized and expanded the curriculum to include politics, history, economics, jurisprudence, literature, modern languages and philosophy. The new curriculum reinvigorated the college and made it one of the nation's preeminent intellectual centers. His graduates included a U.S. president (James Madison), a vice president (Aaron Burr), 10 cabinet members, 60 members of Congress and 3 future Supreme Court justices. Through his students, Witherspoon's presidency helped shape the young nation's political philosophy. Witherspoon's tenure at Princeton also enunciated for the first time the role of higher education as a training field for national leadership. Witherspoon was himself an important philosophy lecturer, who continually reminded his students of their obligations, as scholars, to enter public life and better their nation.

Nassau Hall lay in ruins following the Revolutionary War battles in and around Princeton, but the college was rebuilt and remains the centerpiece of what is now Princeton University, the name it adopted in 1896.

College of Philadelphia The successor school to FRANKLIN'S ACADEMY and predecessor

institution of the University of Pennsylvania. The original academy was an outgrowth of Benjamin Franklin's *Proposals Relating to the Education of Youth in Pennsylvania*, which he published in 1749. Franklin proposed opening an academy to educate young men free of charge in practical courses essential for life in the colonies. He and a group of supporters raised enough funds to buy a building for the school in 1749. Franklin was elected president of the board of trustees, and the new Academy and Charitable School in the Province of Pennsylvania opened in January 1751. In 1755, it added "College" to its name, and, under the leadership of provost WILLIAM SMITH and vice provost FRANCIS ALISON, became the first college in North America to emphasize the sciences and establish a department of medicine. It also was the first college to replace the outmoded tutorial system with European-style professorships that brought talented scientists to lecture. Most colleges at the time assigned a tutor to each class of students for their entire college career, with the college president and one or two colleagues responsible for lecturing in every subject.

Both Smith and Alison were Presbyterians, the products of Scottish education and the Scottish "commonsense" philosophy (although Alison was Irish). Together they adapted and expanded the curriculum to meet the practical needs of colonial era students. The school had two divisions: a Latin school, with a classical curriculum of modern languages, writing, philosophy and mathematics; and an English school, with a more practical curriculum that included writing, merchants accounts, algebra, astronomy, navigation and "all other branches of mathematics."

Closed during the Revolutionary War, it reopened as the University of the State of Pennsylvania in 1770, but changed its name to the University of Pennsylvania in 1779. Besides being the first university to open a department

(and later a college) of medicine (founded in 1765), the University of Pennsylvania was the first North American university to establish schools and departments of botany (1768), business (1881), research medicine (1910) and graduate medicine (1919). Still a private institution, with no relationship to the state-supported Pennsylvania State University in University Park, it was the first university to open a university hospital (1874) and a psychological clinic (1896).

College of Rhode Island Predecessor institution of BROWN UNIVERSITY. Founded in the parsonage of the Rev. James Manning's Baptist church in Warren, Rhode Island, in 1764, it was the first college founded by Baptists, and it served in effect as a Baptist educational answer to Congregational Harvard and Yale, Presbyterian Princeton and Episcopalian Kings College (later Columbia), which tended to limit enrollment to members of their own Protestant denominations.

From its inception, however, the College of Rhode Island was one of the most liberal institutions in the colonies. It was a school "wherein education might be promoted, and superior learning obtained, free of any sectarian religious tests." Its board of trustees was interdenominational, with Quakers, Congregationalists and Anglicans, as well as Baptists, and its doors were open to students of all Protestant denominations. In 1770, it moved to Providence and was renamed Brown in 1804, in recognition of a large gift by Nicholas Brown, an alumnus and son of one of the school's founders.

College of the City of New York The four-year college of liberal arts and sciences at the CITY UNIVERSITY OF NEW YORK. City College, as it is usually called, was founded in 1847 as the Free Academy to provide free higher education to poor, deserving young men, especially

the sons of immigrants, in New York City. Instrumental in its founding was Board of Education president Townsend Harris, who had grown up poor and uneducated himself, but later became the first U.S. minister to Japan. Later still, after he and his family built a successful importing firm, he educated himself and led in planning and founding the Free Academy. The academy was the first free college and, indeed, the first college of its kind in the United States. It changed its name to City College in 1866, about 30 years before New York City's high school offered free education.

College of William and Mary The second oldest institution of higher education in the United States. Founded in 1693 by the Scottish-born churchman JAMES BLAIR, William and Mary, like its predecessor HARVARD, was designed to help alleviate the acute shortage of ministers in the colonies. Fearful that without adequate ministerial shepherding, the colonists and their children would "fall prey to Satan" and grow barbaric, the bishop of London, whose diocese included Virginia, appointed Blair his commissary, or



Sir Christopher Wren Building, College of William and Mary, Williamsburg, Virginia. Built in 1695, it is the oldest academic structure in continuous use in America. (*College of William and Mary*)

deputy, with authority to supervise the clergy in Virginia. At a clerical conference, Blair called for "the better encouragement of learning by the founding [of] a college in this country," which would include a grammar school, a philosophy school and a divinity school. He returned to London to present his proposal to the head of the church and to King William and Queen Mary, all of whom approved the project. On February 8, 1693, a charter was granted for the new college, and Blair was named president for life. Blair imposed a Scottish university curriculum at William and Mary, requiring two years for a bachelor's degree and four for a master's degree. He also adopted the Scottish system of allowing students to live off-campus to save costs, and he banned the English university practice of allowing professors to accept fees from students.

Various Virginia governors interfered with construction, because they feared that the opportunity for betterment through education at the college would tempt planters away from their fields and reduce the colony's revenues from tobacco. Designed by Sir Christopher Wren, the college's first building was completed in 1693; it burned down in a disastrous fire in 1705, but was rebuilt. By the time of Blair's death, there were three buildings at what was by then a well-established institution.

Because of its location at the seat of political and economic power in the colonial South, William and Mary attracted an inordinately large number of young men born to the Virginia establishment who would one day assume power themselves. Not the least of these were THOMAS JEFFERSON, JAMES MONROE, John Marshall and John Tyler. In 1776, students at the college founded PHI BETA KAPPA, the first American intercollegiate Greek letter fraternity.

Damage sustained during the Civil War and lack of money to rebuild forced the school to close in 1868. Although classes resumed a year later, the college closed again in 1881 and did not reopen until 1888, when a small group of

professors attempted to revive the school. In 1906, the Virginia General Assembly assured its permanence by making it a state college. In 1918, William and Mary became coeducational, to train female public school teachers to replace the men lost in World War I. In 1967, the college assumed university status by granting its first graduate degrees. The school has a faculty of about 450 and total enrollment of about 7,750 students, of whom about 5,750 are undergraduates. More than 55% of undergraduates at the once all-male college are now women.

college-operated schools A peculiarly American group of high schools operated by and within a college or university. The origins of college-operated schools go back to the colonial period, when formal secondary-level schooling consisted of only a handful of academies for the children of the wealthy and an even smaller number of colleges to train young men for the ministry. Most students either educated themselves, learned from their parents or the local minister, apprenticed themselves to a master craftsman or engaged a private, entrepreneurial teacher as a tutor. The informal nature of such education all but precluded any clear-cut designation of what constituted the beginning or end of "high school"-level Latin, for example, and "college"-level courses. Students simply studied Latin or any other subject until they mastered it or as long as they could afford the time or money.

The vague line between secondary school and college education persisted as the number of academies grew and the first secular colleges made their appearance. Indeed, Benjamin Franklin's COLLEGE OF PHILADELPHIA began as an academy, or secondary school, in 1751, and only became a college when its provost, William Smith, added the word *college* to its name on a new charter in 1755. Similarly, Baptist minister James Manning's Latin grammar school became the COLLEGE OF RHODE ISLAND by simply allowing

his students to continue their studies to higher, but less than clearly defined levels.

Even in the 19th century, the distinction between secondary school and undergraduate college education remained vague. When MARY LYON founded the first women's college at Mount Holyoke, Massachusetts, in 1837, first-year students were 16 years old and spent their first year studying secondary school subjects to prepare them for college-level studies in their second and third years. And when HENRY BARNARD assumed the chancellorship of the fledgling College of Wisconsin in Madison, in 1859, the college operated what it called a "preparatory department," which was a high school to prepare students for college-level work.

In 1906, City College of New York opened a somewhat different school, the Townsend Harris High School, a free high school to prepare academically talented boys for college. When City College had first opened in 1847 as the Free Academy, New York City had no high schools. Its common, or public, schools offered only an eight-year elementary education program that was inadequate preparation for college. The Free Academy, therefore, opened as a five-year program, with the first, or subfreshman year, offering a preparatory education.

In 1906, as proper high schools began to open, City College expanded its preparatory year into a three-year program in Harris Hall on the City College campus. As New York's public school system developed honors programs and magnet schools to absorb gifted secondary school students, Townsend Harris became redundant, and it closed permanently in 1942. Hunter College, City College's sister school for women went a step further by opening the Hunter College Model School and the Hunter College High School for academically talented girls. Now a coeducational college within City University of New York, Hunter continues to operate both a primary and secondary school.

In contrast to college-run high schools, college-run elementary schools date from the opening of John Dewey's laboratory school at the UNIVERSITY OF CHICAGO in 1896. Designed to study and develop new methods of teaching young children, his school was the forerunner of similar schools at Columbia and other universities. The schools served as important laboratories where educators and educational psychologists studied how children learn and developed the theories of learning and educational psychology that fill many of the standard texts in today's colleges of education.

One outgrowth of the LABORATORY SCHOOLS was an extraordinary secondary school program for young mathematical geniuses at Johns Hopkins University. Started by psychology professor Julian C. Stanley in 1971, the program gave gifted students the opportunity to race through the secondary school curriculum, begin college at 15 or 16 and earn their doctorates by the time they were 20. The program inspired Dickinson College and Franklin and Marshall College in Pennsylvania to open summer sessions for gifted high school students, who often completed two high school years of mathematics in three weeks.

college savings plan A financial vehicle that permits accumulation of tax-deferred savings for eventual payment of college costs. Established by Congress as part of the Internal Revenue Code, a parent, grandparent, friend—indeed, anyone—may contribute funds to the account, which accumulates interest and can grow tax-free. Funds may be withdrawn tax-free if used exclusively for higher education. There are two types of college savings plans:

1. Coverdell Education Savings Account ("Education IRA"). Contributions limited to \$2,000 a year for minor children. Contributions must end and funds must be withdrawn—and spent for college costs—when the child reaches 18. Eligibility is limited to taxpayers filing joint

returns of less than \$100,000 or single returns of less than \$50,000. Contributions are not tax-deductible, but withdrawals, including accumulated income and capital gains, are tax-free.

2. Qualified State Tuition Programs (“Section 529 plans”). Contributions totaling as much as \$100,000 must remain in the account for at least 36 months. Contributions are not deductible from federal income taxes, but withdrawals of accumulated income and capital gains are tax-free if spent on higher education. State-tax consequences differ from state to state; some waive or defer taxes on earnings, and others permit investors to deduct some or all of their contributions from state income taxes. Each state restricts 529 plan investors to a particular menu of investment portfolios, including mutual funds. The result can be costly management fees of more than 2% of assets and sales commissions as high as 6%, depending on the investment portfolio. Investors are free, however, to invest in 529 savings plans in any state, regardless of where they reside or where their children attend college. Assets in 529 plans are considered parental assets, and distributions are not included in calculating student eligibility for federal grants and loans. By 2006, American families had invested about \$65 billion in 529 plans.

(See also EDUCATION TAX CREDITS; FINANCIAL AID; TUITION PAYMENT PLANS.)

college size Usually, the total number of students enrolled part or full time at an institution of higher learning. Nearly 17 million Americans enrolled in two- and four-year institutions of higher learning in the United States in 2006. About 475 institutions had fewer than 200 students and nearly 30 had enrollments of more than 30,000.

The following table lists the number of educational institutions according to enrollment totals in the 2002–03 academic year:

Total Enrollment	All Institutions	Universities	Four-year Colleges	Two-year Colleges
Under 200	459	0	264	195
200 to 499	600	1	293	306
500 to 999	539	1	358	180
1,000 to 2,499	905	6	613	286
2,500 to 4,999	630	20	320	290
5,000 to 9,999	468	45	207	216
10,000 to 19,999	304	87	80	137
20,000 to 29,999	112	65	11	35
30,000 or more	54	34	5	15

Source: U.S. Department of Education

college transfer A student who has taken definitive leave of one college institution to pursue the remainder of his or her studies for a degree from a second college. There are a wide variety of reasons for student transfers, ranging from geographic relocation to the pursuit of studies not available to the student’s current institution. No accurate figures are available on the number of transfers each year because of the difficulty of identifying true transfers from those earning additional college credits at other colleges, without actually abandoning their original college affiliations.

College Work Study Program (CWSP)

See CAMPUS JOBS; WORK STUDY.

Collegiate School One of the original 11 Dutch West India Company schools in New Amsterdam (now New York City) and, with HARVARD COLLEGE and BOSTON LATIN SCHOOL, one of the three oldest schools still in existence in the United States. Now a highly selective private primary/secondary day school for gifted boys, Collegiate’s origins date back to at least 1638, although one unconfirmed report traces some foundation stones to 1628. If true, it would be the oldest school on the American continent.

colonial education in America The English tradition of formal and informal instruction of

children in the American colonies. With the exception of the 11 Dutch West India Company schools in New Amsterdam, early colonial education in America was a replica of the English system. That system's origins can be traced to the arrival of Augustine in England in 597 to convert the English to Christianity. His success necessitated a system of schools that he and his colleagues started in their new cathedrals to train a native clergy. As the number of schools proliferated over the succeeding centuries, the church sought secular financial support and, in return, accepted secular students from wealthy families seeking the cultural veneer of a formal education.

The 12th-century rediscovery of the works of Aristotle, Justinian, Galen, Hippocrates, Euclid and Ptolemy set off an explosive expansion

of western European and English education and the construction of the first universities in Paris, Bologna, Oxford and Cambridge. English lower-level education was quickly reshaped into elementary PETTY SCHOOLS that taught basic reading, writing and arithmetic and upper-level grammar schools that prepared students for college. It was this system that the first English settlers took with them to the American colonies. By that time, the development of the printing press had led to the standardization and proliferation of textbooks with which the church and state could control what children read and were taught and grew up to believe.

As in England, colonial-era schools in America remained instruments to preserve religious faith and the existing social and economic order. Although a handful of the



A 19th-century artist's idealized rendering of colonial-era education (*Library of Congress*)

wealthiest children were educated by private tutors, most children who could afford to do so enrolled in petty schools, where seven-year-old boys and girls spent two to three years learning reading, writing and arithmetic. The basic "text" was a HORNBOOK, a small, paddle-shaped piece of wood, with a veneer of horn on which the letters of the alphabet and a short prayer were inscribed. Children learned by reciting the alphabet and syllabarium (see SYLLABICATION) (ba-be-bi-bo-bu, ca-ce-ci-co-cu) and a few simple words. From the hornbook, petty school students progressed to a catechism or primer, which contained simple liturgical prose designed to teach children to read while grounding them in the principles of the Church of England. Petty schools also taught basic writing, arithmetic, good manners and some singing and music.

The few children who did not then begin apprenticeships continued their education in grammar schools lasting seven or eight years, or "forms," which was the name of the long benches on which students sat. Taught by clergymen, they studied Latin grammar, conversation and composition and selected Latin literature (Cato, Aesop's *Fables*, Erasmus, Ovid, Terence, Horace, Virgil, Juvenal, Caesar, Sallust, Cicero and the Vulgate); Greek grammar and literature (Homer, Euripides, Isocrates, Hesiod and the Greek Testament); and Hebrew grammar. The curriculum was quite formalized. Monday through Thursday morning classes, lasting from 6 to 11, concentrated on grammar. Afternoon classes, from 1 to 5 in summer and 1 to 4 in winter, dealt with literature. Reviews and oral examinations were held on Fridays; Saturdays were devoted to essay writing and Sundays to catechizing and other religious exercises.

As in England, however, secularism was working its way into the curriculum of the petty school and grammar school, and causing consternation among upper-class loyalists who

feared popular education as a source of heresy and rebellion. As Virginia governor WILLIAM BERKELEY put it, "I thank God there are no free schools nor printing [in Virginia,] and I hope we shall not have these [for a] hundred years; for learning has brought disobedience and heresy, and sects into the world, and printing has divulged them, and libels against the best government. God keep us from both!" But other colonists feared that life in the wilderness would breed "degeneracy, barbarism, ignorance and irreligion." They saw education as a means of instilling loyalty to crown and church and of giving colonists the intellectual tools to develop the economy.

The Dutch were relatively quick to establish a system of elementary common, or public, schools, and by 1664, 11 of the 12 Dutch communities boasted at least one school each. Sometime between 1635 and 1643, Gov. Berkeley's objections notwithstanding, two private schools were founded in Virginia with bequests from planter Benjamin Syms and surgeon Thomas Eaton. Although the Plymouth Colony in Massachusetts left all schooling to parents, the Bay Colony opened schools in 7 of its 22 towns within 10 years of its first settlement. Boston opened its first school in 1635; Ipswich and Charlestown followed suit in 1636; Cambridge in 1638; and Dorchester in 1639. To spur the expansion of education, New England clerical and lay leaders enacted the landmark School Act of November 11, 1647. Without schools, said the law, "that old deluder, Satan" would "keep men from the knowledge of the Scriptures. . . ."

The act ordered every town with 50 householders to open a petty school to protect children against "the fiery Darts of Satan," and it ordered every town with 100 families or householders to open a grammar school. The law set a standard that spread throughout the colonies, regardless of the religion that dominated a particular region. The shortage of clergy, however,

forced churches to turn much of the elementary-level teaching to the laity. Whoever could teach did so—parents, tutors, clergymen, physicians, lawyers, merchants and craftsmen. Piety, good character and religious orthodoxy were the only prerequisites. Most communities had no funds to build schools, and petty school instruction took place in any available site—kitchens, manses, churches, meetinghouses, sheds and shops and, occasionally, in school-rooms. Among the most common petty schools were the so-called *DAME SCHOOLS*, taught by mothers in their kitchens. Most grammar school instruction, on the other hand, was led by clergymen in their churches.

Although called “free schools,” early colonial schools were free only to the children of parishioners and landed gentry who could afford to pay for school costs and instructor salaries. It would not be until the late 1830s that the concept of free public school education would be introduced. Throughout the colonial era, the vast majority of poor children were bound out as apprentices. The handful of poor children who did attend petty school were almost always servants’ children whose education was paid for by their masters “to prevent the rise and growth of a Barberous, Rude or Stubborn class of servants that would prove Pests instead of Blessings to the country. . . .” Petty school not only taught them to lead religious lives, but to support the existing social and economic order, with its class system and economic inequalities, by pursuing “humble and useful callings.” In addition to the Bible, petty schools taught them the “capital” laws [applying to felonies] of the land and the penalties for runaway servants.

Only the wealthiest children bent on professional lives as clergymen, physicians, lawyers, judges or provincial governors sought instruction beyond the petty school level in grammar or *LATIN GRAMMAR SCHOOLS*, which prepared students for college. The early colonies

had but one: *HARVARD COLLEGE* in Cambridge, Massachusetts. All the others were a long, costly and often dangerous journey away in England. Harvard had been founded in 1636, less than a decade after the settlement of the Massachusetts Bay Colony. As was true at Oxford and Cambridge, upon which it was modeled, Harvard began as a training school for ministers, but nevertheless adapted its curriculum to attract secular students from wealthy families. In the first 50 years of its existence, before any other college would open on American shores, Harvard produced 388 alumni, of whom 180 were clergymen. Of the rest, 42 became public servants, 27 were physicians, 13 were teachers, 10 were merchants, 11 were planters and gentlemen and 5 were soldiers and mariners. The remainder either died young or engaged in unidentified occupations.

Harvard’s curriculum required only three years of study, instead of four, as at Oxford and Cambridge. The curriculum included logic, rhetoric, ethics, politics, history, arithmetic, geometry, astronomy, physics, nature of plants, Greek grammar and literature, Hebrew grammar and Bible readings, Chaldee (Chaldean) grammar and Apochryphal readings, Syriac grammar and New Testament readings, and catechetical divinity. Fluency in Latin was a prerequisite for admission. Instruction was by lecture, declamation and disputation and the constant exchange of philosophical and theological ideas. The constant flow into the colonies of immigrants from a variety of countries, however, brought an equal variety of philosophies, religious beliefs and approaches to theology. By the end of the first century of colonization, what had begun as a reproduction of the English system of education metamorphosed into a new configuration. Liberal Unitarians eventually took over Harvard, and the founding Puritans left Cambridge for New Haven, Connecticut, where they founded Yale to preserve their Calvinist orthodoxy. Appalled by the spread of Puritanism,

the Church of England sent its representatives to the colonies to found the COLLEGE OF WILLIAM AND MARY in Virginia and King's College (later COLUMBIA COLLEGE) in New York. Dissenters from both the Church of England and the Puritans, meanwhile, founded colleges of their own at Princeton, New Jersey, and in Rhode Island, while humanists, led by Benjamin Franklin, founded the secular COLLEGE OF PHILADELPHIA in the belief that practical skills were more important to the survival of the new nation than religious instruction. By the time of the Revolutionary War, there were nine degree-granting chartered colleges in the colonies, with four more about to open and at least a dozen private academies offering college-level education.

Colorado The 38th state, admitted to the Union on the nation's 100th anniversary. The state established its first public university in the same year. The state university system has 14 four-year and 15 two-year public colleges and universities, with a total enrollment of nearly 235,000 students. Colorado also has 30 private four-year colleges and 16 private two-year colleges. The 53.4% graduation rate for all the state's colleges is only slightly below the national average of 54.4%. The academic quality of the state's 1,667 public elementary and secondary schools ranks well above the national average, however, and student reading and math proficiency are among the top 20 states in the nation. More than 33% of Colorado's nearly 750,000 elementary and secondary school students are minority children—the largest proportion, more than 23%, Hispanic. About 10.5% of all schoolchildren live in poverty.

color phonics systems A method of teaching letter sounds and reading by color-coding vowels and various letter combinations. Originally developed for early elementary education, the system has proved useful in a variety

of remedial reading programs, especially with dyslexics. The system uses widely spaced letters, with short vowels printed in red to help children learn to read monosyllabic then polysyllabic words. The red vowels help students distinguish each syllable as a separate sound, and an underlined vowel indicates the accented syllable.

Columbia College The four-year undergraduate institution that was founded in 1754 as King's College and now forms the heart of Columbia University. Like the College of William and Mary in Virginia, King's was founded by Anglican clergy and their supporters concerned with propagating the English faith in the provinces. Despite its sectarian origins, King's College readily adapted its curriculum to the practical needs of students in a major seaport and trading center. Although its first president, Anglican clergyman Samuel Johnson, retained fluency in Latin and Greek as a prerequisite for admission, he expanded an otherwise classical curriculum to include such practical courses as science, mathematics, modern languages, numbering and measuring, surveying and navigation, mining, geography, history, husbandry, commerce and government. Following the lead of the similarly practical COLLEGE OF PHILADELPHIA, Johnson also established a medical department in 1767 and engaged professors in anatomy, surgery, physiology, pathology, chemistry, midwifery and medicine.

After the Revolutionary War, the New York State Board of Regents set about "cleansing" King's College of its royalist Anglican traditions. Renaming it Columbia, the board tried to make it part of a new, planned statewide public school system in which primary and secondary schools would feed students into Columbia and two other colleges (Union and Hamilton) the board created elsewhere in New York State. After the War of 1812, however, the state could no longer fund both the lower-level



Low Memorial Library and Plaza, in the heart of today's Columbia University, in New York City (Joe Pineiro, *Columbia University*)

common schools and the colleges. It set the colleges adrift to raise their own funds and operate independently and privately. To increase its student constituency and revenues, Columbia went on to add a law school in 1857, allied itself with the College of Physicians and Surgeons in 1860 and added a School of Mines in 1863.

Nevertheless Columbia was still a small, old-fashioned college of about 100 men when FREDERICK A. P. BARNARD became its president in 1864. By the time he died in 1889, however, he had built the college into a model modern university of more than 2,000 students. During his tenure, he expanded the undergraduate curriculum and established new graduate and pro-

fessional departments and schools, including the famed Teachers College. Despite fierce opposition from his board of trustees, he established a women's department, which six months after his death was renamed Barnard College in his honor.

His successor, the wealthy merchant and political reformer Seth Low, presided over Columbia's official redesignation as Columbia University during his 12-year tenure. He personally contributed a huge library to the college and reorganized the graduate schools. NICHOLAS MURRAY BUTLER became president in 1902, and for the next 43 years guided Columbia's growth into the gigantic institution it is today, with about 19,000 students, a faculty of

2,100 and graduate schools in business, education, engineering, law, medicine and social work. Coeducational since 1983, Columbia College's enrollment of nearly 4,200 in 2000 was almost evenly divided between men and women. Barnard College remains an affiliated, though independent, women's college, with an additional 2,300 women students who can cross-register at Columbia.

Columbian Agricultural Society for the Promotion of Rural and Domestic Economy A privately funded, early 19th-century organization that taught farmers to become more efficient. Like Elkanah Watson's Berkshire agricultural societies (see BERKSHIRE AGRICULTURAL SOCIETY), the Columbian Agricultural Society was founded when the growth of overseas and domestic markets made it imperative that American farmers convert their properties from subsistence to commercial farms. In 1810, the society's secretary, Rev. David Wiley, a teacher, merchant and scientist who had graduated from the College of New Jersey at Princeton, founded the society's semimonthly technical and scientific journal called *Agricultural Museum*. Although it survived only two years, it was a forerunner of similar journals that, together, became primary educative agencies for American farmers during most of the 19th century.

Comenius, John Amos (1592–1670) Moravian educator, whose *Orbis sensualium pictus* (1659) revolutionized the teaching of Latin and became a standard grammar school text in England and the colonies. A graduate of the University of Heidelberg, Comenius became a minister and preached in both German and his native Czech. Religious wars forced him to flee, and at various times, he found himself trying to preach to congregants and teach their children in Moravia, Bohemia, Poland, Hungary, Sweden, Holland and England. Unable to speak their language, he discovered he could

teach children Latin by illustrating each new word with a drawing. The results were two texts that changed teaching methods throughout the Western world and earned him an invitation to become chancellor at Harvard College in Cambridge, Massachusetts. His *Janua linguarum reserata*, or *The Gate of Languages Unlocked*, abandoned rules of grammar in favor of useful, everyday phrases, while *Orbis sensualium pictus*, or the *Visible World in Pictures*, illustrated each vocabulary word. While living in England, Comenius was apparently asked to come to America to head Harvard in 1641, but nothing is known of his response or the reasons he never came to the colonies.

Comer, James P., M.D. (1934–) American professor of child psychiatry and founding director of the Yale Child Study Center School Development Program, at Yale University. A graduate of Indiana University and the Howard University College of Medicine, Comer pioneered reform of education in inner-city public schools and identified preschool family and social experiences as the sources of most school underachievement in school. "Development that was appropriate on the playground, at home or other places outside of school," he wrote, were "inappropriate in school . . . [and] at variance with mainstream expectations" of teachers, who saw their inner-city students as "bad" and of low academic potential.

Parents, in turn, interpreted their children's failure in school as their own personal failure "or as evidence of animosity from the mainstream. They lose hope and become less supportive of the school," Comer wrote. "Some parents ashamed of their speech, dress, or failure to hold jobs, may become defensive and hostile, avoiding contact with the school staff. The result is a high degree of distrust between home and school." But Comer found schools as unprepared to handle inner-city children as the children were to handle mainstream school-

ing. "School staffs," he said, "lacked training in child development and behavior, and understood school achievement as a function of genetically determined intellectual ability and individual motivation. . . . The staffs usually responded with punishment and low expectations. "Such responses . . . usually led to more difficult staff-student interactions and, in turn, to difficult staff-parent and community interactions, staff frustration, and a lower level of performance by students, parents and staff."

Comer recognized that any improvement in academic and social achievement would depend on schools' providing social and health as well as academic services to students and their families—that is, what he termed a "comprehensive" approach to education.

Comer developed what eventually grew into the far-reaching School Development Program at two inner-city schools in New Haven, Conn., in 1968. The Yale Child Study Center provided each school with the support services of a social worker, psychologist, special education teacher and child psychiatrist.

Comer helped retrain members of the school staff and faculty and develop strong relationships between parents and the school. Over the next 15 years, grade equivalent scores of fourth graders climbed from an average of 3.0 in reading and mathematics to 6.0 in reading and 6.0 in mathematics. At the same time, both schools showed significant declines in student absentee rates, misbehavior and other social problems. The results encouraged about 700 schools across the United States to become so-called Comer Schools, by adopting the School Development Program.

(See also COLEMAN REPORT.)

Command and General Staff School A specialized college in Leavenworth, Kansas, that provides graduate-level military science instruction for prospective U.S. Army colonels. Like the ARMY WAR COLLEGE, the Command and

General Staff School was founded after the Civil War as the Army General Service and Staff School to supplement the education of the U.S. Military Academy, which provided future officers with undergraduate military education.

commencement The act of beginning; a term used since the 13th century for ceremonies in which academic diplomas or degrees are conferred on students graduating to and, thus, commencing a new period of their lives.

commercial schools Any of a wide variety of FOR-PROFIT SCHOOLS OR PROPRIETARY SCHOOLS, offering courses and practical training in specific job skills for the workplace—for example, keyboarding. Usually unregulated and unaccredited by recognized education accreditation agencies, commercial schools differ from for-profit colleges in that they usually offer a narrower range of courses that are skills-oriented and lead to certificates rather than degrees for students who successfully complete their course work. Students tend to be working adults who have not graduated from high school, and teachers tend to be men and women with practical experience rather than academic credentials. Class hours are usually scheduled to be convenient for working students.

(See also CAREER SCHOOLS; ENTREPRENEURIAL SCHOOLS.)

Commission on Academic Freedom A group formed by the AMERICAN ASSOCIATION OF UNIVERSITY PROFESSORS in 1985 to combat censorship in elementary and secondary schools. Believing that censorship in elementary and secondary schools affected the quality of education that students brought to college, the commission issued a report entitled *Liberty and Learning in the Schools, Higher Education's Concerns*. It detailed the history of censorship in elementary and secondary schools and the effects it ultimately had on higher education.

Commission on Country Life A commission of academic leaders, created in 1908 by President Theodore Roosevelt to study the deteriorating quality of life in rural America and recommend ways for remedying the situation. Roosevelt appointed the commission in response to sharp declines in farm production and a mass exodus from rural areas. The commercial and social deterioration of American agriculture had started after the Civil War, as wheat and corn prices plunged by 70% to 75%, while transportation, storage, processing and interest costs soared and drove more than one-fourth of all farmers out of business. By 1910, only 37.7% of Americans worked in agriculture, compared with 51.6% in 1870, and rumors swept the country that huge commercial trusts had bribed federal government officials to drive small farmers out of business and gain control of American agriculture.

The commission surveyed a half-million rural Americans and received 100,000 responses to a 12-item questionnaire about farm life. After numerous public meetings in 24 states, the commission reported in January 1909 that ignorance, lack of decent schooling, poor communication and the absence of effective local leadership were responsible for the plight of American farmers. At the technical level, they knew little or nothing about such basic elements of agriculture as crop rotation, mechanization, pest control or erosion control. The commission called for a massive, coordinated program of education through churches, schools, libraries, agricultural societies, YMCAs and LAND-GRANT COLLEGES to train farmers in modern agricultural techniques. It also called for the building of modern highway systems to help farmers get their goods to market.

Congress, however, not only rejected the commission's recommendations, it refused an appropriation to print and publicize the report and ordered the commission to end its work. Ultimately, its efforts came to naught.

Commission on Higher Education A group established in 1946 by President Harry S. Truman to study the role of higher education in American life. Its report, issued two years later, not only altered the average American's perception of higher education, it converted American institutions of higher learning from halls of esoteric learning for the very rich into corridors of practical learning that could assure the success of the average American, regardless of his or her social or economic background.

Truman established the commission following the unexpected academic successes scored over the previous two years by returning servicemen attending colleges and universities under the Servicemen's Readjustment Act of 1944—popularly known as the G.I. BILL OF RIGHTS. Originally passed to prevent mass unemployment by allowing colleges to absorb some of the demobilized servicemen at the end of World War II, the G.I. Bill surprised both the government and the higher education establishment. Both had expected veterans to attend college for only a few months before boredom with academic life provoked their transfer into the job market. Most, after all, were older, mature men, often with family responsibilities and, just as often, from culturally disadvantaged backgrounds.

Instead, the vast majority of veterans not only performed better academically than their junior classmates, most remained at college to complete their degrees and enter the workforce at far higher salaries than men without college degrees. Their unexpected successes provoked President Truman to appoint the commission. Its astonishing report, *Higher Education for American Democracy*, called on American colleges and universities to abandon their role as a training ground for the intellectual elite and, instead, to become "the means by which every citizen, youth, and adult is enabled and encouraged to carry his education, formal and informal, as far as his native capacities permit." The report found that at least 49% of the American population

had the mental ability to complete at least 14 years of formal schooling—that is, through the first two years of college—and that at least 32% could complete four years of college and professional education and graduate school.

The commission urged American colleges and universities to expand and double higher education enrollments from the 2.3 million in 1947 to 4.6 million by 1960. The commission called on each state to plan and build new institutions of higher learning and to expand junior colleges. It called on the federal government to establish a program of need-based undergraduate and graduate scholarships that would open higher education to all Americans, regardless of social or economic backgrounds. The commission also asked Congress to pass a federal law outlawing historic discriminatory practices of colleges and universities and to outlaw discrimination in higher education on the basis of race, color, gender and income.

The immediate response of the states and Congress was silence and inaction. But the report produced a groundswell of public demand for access to higher education, and over the next five years, states did expand their colleges and universities and build hundreds of new community colleges. Congress expanded the G.I. Bill to include all veterans, regardless of whether they served in World War II or not, and it created a massive program of higher education scholarship and loan programs. In 1954, the U.S. Supreme Court added the stamp of inevitability to the popularization of higher education in its landmark ruling in *BROWN V. BOARD OF EDUCATION OF TOPEKA*, which declared racial segregation in public education unconstitutional. Subsequent passage of federal civil rights law opened higher education in the United States to all citizens.

Commission on Professional Rights and Responsibilities A NATIONAL EDUCATION ASSOCIATION group charged with enforcing the NEA's Code of Ethics of the Education Profession.

Commission on the Future of Higher Education A commission appointed by Secretary of Education Margaret Spellings to determine the skills college students should be acquiring—writing, critical thinking, problem solving and the like—and whether American colleges are succeeding in teaching their students those skills. Spellings created the commission in 2005 in response to years of mounting criticism that colleges are continually charging students more and teaching them less. While annual costs of attending some colleges have soared to \$45,000 and more, GRADUATION RATES remain barely above 50% on average, and minority students drop out at rates of 60% to 70%. For students who do graduate, the Department of Education's National Assessment of Adult Literacy in 2003 found that fewer than one-third of those tested were able to read complex English texts and draw complicated inferences. In addition to parents and students, the federal government and the 50 state governments, which provide more than one-third of college and university funding, are demanding that institutions of higher education be held accountable for the educational outcomes of the students they enroll. Except for graduate school entrance examinations and certain licensing exams, few if any colleges measure what and how much their students have learned during their undergraduate years. Indeed, until recently, no standardized tests existed for such measurements. In 2005, however, the Council for Aid to Education, a former division of the Rand Corporation, developed the COLLEGE LEARNING ASSESSMENT TEST, which asks college students to write essays and solve complex problems. Efforts to introduce the test, however, have met with fierce resistance from college administrators and faculty, who call such tests an intrusion on academic freedom.

(See also COLLEGE: *OUTCOMES*.)

Commission on the Reorganization of Secondary Education A NATIONAL EDUCATION ASSOCIATION group whose 1918 report,

Cardinal Principles of Education, served as a blueprint for reorganizing comprehensive public high schools. Two decades prior to the 1918 report, American secondary schools had been reorganized into comprehensive high schools, a uniquely American institution in which all secondary school students in a geographic area attended a single school, regardless of whether they eventually planned to go to college or directly to work. At the time of the 1918 report, students in each high school were grouped in one of four divisions, two for superior students and two for inferior, but all were obliged to study the same core curriculum of Latin, Greek, English, modern languages, mathematics, physics, astronomy, chemistry, biology, zoology, physiology, history, civil government, political economy and geography.

Devised in 1884 by the NEA's COMMITTEE OF TEN, the curriculum proved too demanding for most high school students. Many had just arrived from foreign lands with their immigrant parents and could not even speak English. The result was that by 1910 fewer than 10% of American adolescents attended secondary school, and a growing number of social and educational reformers began demanding reforms that would increase the "holding power" of high schools by adapting the curriculum to student needs and occupational destinations. Their demands resulted in the formation of the Commission on Reorganization of Secondary Schools and a report that recommended a new, far less academically demanding core curriculum. The new curriculum was to be based on seven "Cardinal Principles" or educational objectives: health, command of fundamental processes, worthy home membership, citizenship, ethical character, vocation and worthy use of leisure.

To achieve these goals, the commission recommended that schools expand curricula to offer a wider choice of subjects; adapt subject matter and teaching methods to student needs

and occupational goals; make academic requirements more flexible; and establish extensive programs of guidance and counseling.

Committee for Public Education and Religious Freedom v. Regan A 1980 U.S. Supreme Court decision that New York State could reimburse private and parochial schools for the costs of state-mandated testing and other activities. In 1974, New York had enacted a law allowing the state to reimburse 2,000 nonpublic schools for such testing, but the ruling was challenged on the grounds that it violated the ESTABLISHMENT CLAUSE of the First Amendment, which prohibits state establishment of religion. As in a battery of similar cases (see CHURCH-STATE CONFLICTS), the Court held that the law had a "secular legislative purpose," accrued only to the benefit of students and did nothing to advance any religion.

Committee of Fifteen A NATIONAL EDUCATION ASSOCIATION group formed in 1893 to study and recommend reforms for elementary school education in the United States. The committee issued its report in 1895, supporting the prevailing eight-year system of elementary schooling, with grammar, literature, arithmetic, geography and history as core subjects. The committee recommended that each be taught as separate subjects, instead of correlated in a single broad subject in which students jumped in and out of each subdivision at random.

Committee of Ten A NATIONAL EDUCATION ASSOCIATION group formed in 1891 to study and recommend reforms for secondary school education in the United States. Formed in response to demands for educational reform by Harvard University president CHARLES W. ELIOT who became its first president, the committee published recommendations in 1894 that changed secondary school education for the next 30 years. The report urged high schools

to adopt a required core curriculum of Latin, Greek, English, modern languages, mathematics, physics, astronomy, chemistry, biology, zoology, physiology, history, civil government, political economy and geography. Art and music were not mentioned.

At the time, American high schools had evolved into institutions in which all students living within a specific geographic area attended the same central, comprehensive institution, regardless of whether they intended to go to college or not. The report recommended that students in each high school be grouped by ability into one of four divisions or tracks, two for superior students and two for inferior, but that every subject in the core curriculum "should be taught in the same way and to the same extent to every pupil. . . ."

Aside from improving the quality of secondary school education, the committee's goal was to standardize the curriculum to allow every college-bound student to begin college studies with the same academic background. For years prior to the committee's formation, Eliot had used his position to attack the quality of American public school education. Stung by his attacks, the NEA organized three important committees: The Committee of Ten, to study secondary school education in 1891; the COMMITTEE OF FIFTEEN, to study elementary school education in 1893; and the COMMITTEE ON COLLEGE ENTRANCE REQUIREMENTS, appointed in 1895.

Committee on Civil Rights A group appointed by President Harry S. Truman to study law enforcement measures "to safeguard the civil rights of the people." The committee's 1947 report, *To Secure These Rights*, represented the first strong federal government stand against racial injustice. It marked the beginning of a 20-year campaign to end racial and religious segregation and discrimination in education and other areas of American life. The committee report said that civil rights had become a national problem requiring federal legislation to guaran-

tee the rights of all Americans, regardless of race, religion or national origins. The report exposed widespread legal and illegal discrimination in housing, education and health care against Jews, Roman Catholics, African Americans, Asian Americans, Hispanics and Native Americans.

"We believe," the report concluded, "that not even the most mathematically precise equality of segregated institutions can properly be considered equality under the law. . . . No argument or rationalization can alter this fact: a law which forbids a group of American citizens to associate with other citizens in the ordinary course of daily living creates inequality by imposing a caste system on the minority group."

The committee urged Congress to enact a Fair Employment Practices Act. It also urged states to enact "fair educational practice laws for public and private institutions, prohibiting discrimination in the admission and treatment of students based on race, color, creed or national origin. It recommended creation of a permanent CIVIL RIGHTS COMMISSION in the Executive Office of the President and urged "elimination of segregation, based on race, color, creed, or national origin, from American life."

Committee on College Entrance Requirements A NATIONAL EDUCATION ASSOCIATION group formed in 1895 to develop a standardized high school curriculum to prepare students for college. Published in 1899, the committee's report standardized college admission requirements by basing them on successful completion of a required number of high school course units. At the time, each college had its own entrance examination based on its particular set of academic requirements. Such requirements varied widely from college to college. Few students could prepare for more than one or two such examinations. Under the committee's new system, students would be eligible for college if they successfully completed four units of foreign languages, two each of English and

mathematics, one each of science and history and a program of approved electives.

common application A standardized college application originally developed by a group of about a dozen midwestern and eastern colleges and universities to ease the clerical burden on college applicants. Used by about 200 colleges and universities, the common application is available from most high school guidance counselors either in paper or electronic format. In either format, it permits a student to fill out a single application and send photocopies to any participating colleges.

common branches An obsolete term referring to the basic subjects of an elementary school curriculum, including such branches as English, arithmetic, science, history, music, art, and so on. Until the mid-1960s, an elementary school teaching certificate was often called a "common branches certificate."

common school The predecessor institution of the modern, tax-supported, American public elementary school, which every child in the school district may attend free of charge. Although the concept of public education was not new when the United States gained its inde-



An artist's rendering of a 19th-century common school

pendence, it was not a popular concept. In the country, parents needed their children to help them work the fields. In cities, children were in demand as inexpensive factory workers and parents needed the extra income their children could earn. By the early 1830s, however, the industrial revolution spawned increasingly complex machinery, and the use of illiterate children to operate such equipment proved counterproductive. At the time, educational reformers such as HORACE MANN were calling for universal free public education. An idealist, Mann feared the demise of democracy in the United States if its citizens were not literate enough to vote and govern themselves intelligently. Ironically, some of the very industrialists who had exploited child labor for the previous half-century suddenly backed Mann's educational reform movement because the operation of the complex machines in their factories required more literate workers. Parents also began supporting public school education when they saw it might give their children more earning power.

In campaigning for public schools, Mann made a blatant appeal to such selfish interests, promising that educated young men and women would make better skilled, more productive workers who could earn more money for their families and employers than uneducated workers. Gradually, Mann won popular support for establishment of free common, or public, schools in Massachusetts and the hiring of trained teachers. Citizens contributed more than \$2 million to build common schools, and an industrialist gave \$10,000 to build the nation's first teacher training institute in Lexington, Massachusetts, which opened in 1839. Other reformers went on to found similar public school systems in Rhode Island, Connecticut, New York, Pennsylvania, Ohio and Wisconsin. The end of the Civil War saw the public school movement spread into the South and the western territories. By the end of the century, every state had a free common school system.

community college A two-year, degree-granting public institution of post-secondary school education, designed to serve the needs of the local area or community. Still evolving, community or JUNIOR COLLEGES, offer one or more of four broad curricula: academic curricula leading to an associate degree in arts or science that serve to bridge the gap between high school and four-year colleges; vocational and occupational education leading to an associate degree or professional certification; remedial programs; and adult and continuing education, which may or may not lead to an associate degree or certificate.

Community colleges evolved out of the vast expansion in the number of public and private colleges, universities and institutes in the half-century following the Civil War. Some were founded for special purpose such as nursing, mechanics and other occupational skills that only required two years of formal classroom training. Others emerged from a process of institutional growth or contraction determined by market demand in particular areas. Thus, some academies (see ACADEMY) grew into colleges, while many of the mostly three-year colleges, either shrank into two-year "junior" colleges or expanded into four-year "senior" institutions. Of the two-year junior colleges most were private institutions, and the term junior college continues to be used to differentiate private from public, or community, colleges.

By the turn of the century, most professional schools required only two years of college education, thus permitting junior colleges offering thirteenth and fourteenth grade education to send their students directly into professional school without spending four years at conventional colleges. After professional schools imposed bachelor degrees requirements for admission, junior colleges became bridges between high school and four-year colleges, serving those students who had not fulfilled their secondary school academic requirements

for admission to four-year colleges. That role expanded after World War II, as returning soldiers took advantage of college scholarships offered under the G.I. BILL OF RIGHTS. Those who had not finished their secondary school education or were otherwise unqualified to enroll directly into four-year colleges, enrolled in junior colleges to obtain the needed academic qualifications. As the demand for such education expanded, state funds were used to build public junior, or community, colleges.

As four-year colleges began adopting OPEN ADMISSION policies in the early 1960s, community colleges faced a loss of their traditional constituencies, and they were forced to turn elsewhere for new students. They expanded into two new areas: the booming adult education market and vocational education, geared to the needs of their communities. The result was an expansion in the number of community colleges from fewer than 600 in 1960 to 980 in 2004. There are also 148 private two-year colleges in addition to the public community colleges, and together, America's two-year colleges now enroll nearly 12 million students—6.6 million in credit courses and 5 million in noncredit courses—compared with only 750,000 in 1960.

Most community colleges try to specialize in one or two areas of vocational training, such as health care, which meets the needs of nearby employers. Many community colleges have cooperative VOCATIONAL EDUCATION programs with local industries, whereby the college and a local company or companies join to provide a "total," integrated vocational education package. The college provides most of the necessary classroom education, often paying company personnel as ADJUNCT instructors, and the company provides students with paid, on-the-job training.

Other community colleges have so-called two-plus-two, or tech-prep programs, which offer students a four-year vocational education

program that begins in the student's junior year of high school and continues through community college.

Community colleges offer students advantages unavailable at most other institutions of higher learning. Aside from low fees, they offer students an opportunity to perfect academic skills while learning a new craft or occupation. They allow students to attend part-time and keep their jobs while continuing their education. They usually set no minimum time to complete the work for a degree or certificate, and students may enroll in as few or as many courses as they want. Because teachers tend to be part-time adjuncts, many are actually professionals in the fields they teach.

Beginning in 2001, some community colleges with extensive two-year associate degree programs in specialties such as teacher training or health care expanded course offerings to permit students to obtain baccalaureate degrees. By early 2006, a dozen states, including Florida, Arkansas, Nevada and New Mexico, had passed laws allowing community colleges to award bachelor's degrees in specific areas. A critical shortage of teachers and nurses motivated the change in Florida, while California and Arizona expanded community colleges to absorb the expanding student population without incurring the costs of building new four-year colleges. Arizona has only three public universities and no room to accommodate the increased numbers of high school graduates demanding entry into four-year degree programs. Because of their more Spartan facilities, community colleges charge only about \$60 a credit hour, or half the cost of four-year colleges.

community education A wide range of educational opportunities sponsored by local government for the entire community, including adults of all ages, as well as children. Communities make such education available through a

wide variety of conduits, including local municipal facilities and public and private schools, colleges and universities. Depending on the size and extent of such programs, some communities have community education councils that employ community education directors and staffs to organize and supervise such programs. Community education programs depend heavily on volunteer participation and contributions, although some state and federal grants are available. Program offerings range widely, from formal academic courses to instruction in crafts and hobbies to outright entertainment.

community school A type of school organized at the beginning of the 20th century to educate as many students as possible in the widest variety of subjects in the least amount of space. Often called a "platoon" school, the community school in each neighborhood used every available space—the art room, auditorium, gymnasium, shop—as classrooms when they were not in use fulfilling their designed functions. The system increased school capacity by 40%, without the need for extra teachers at a time when immigrant families were pouring onto American shores in record numbers and schools were unable to cope with increases in school population.

The community school system grouped students into two platoons, with one studying traditional academic subjects in traditional classrooms, while the other used the specially equipped service rooms to study nonacademic classes such as art, music or shop. The platoons switched rooms to give each platoon an equal amount of time of instruction in academic and creative work.

Superintendent of Schools William Wirt, a student of JOHN DEWEY, organized the first platoon in Bluffton, Indiana, in 1900 and expanded his ideas to every school in the new steel town of Gary, Indiana, in 1907, when he assumed the superintendency of schools there.

In Gary, however, he expanded the platoon system to obtain 24-hour-a-day utilization of school facilities by opening up schools during evening and nighttime hours for adolescents and adults who worked during normal school hours. Called the GARY PLAN, Wirt's community schools were soon teaching more adults at night than they were children during the day.

The plan proved so successful, it spread to more than 200 cities. It ran into opposition in New York, however, when militant teacher associations rebelled against the extra hours and teaching loads and parents objected to what they saw as a reduction in the quality of education. After rioting broke out in schools in Manhattan, Brooklyn and the Bronx, New York abandoned the Gary Plan, and, one by one, other cities returned to traditional school organization in the face of mounting teacher opposition.

Community Schools and Comprehensive Education Act of 1978 A section (Title VIII) of the Educational Amendments of 1978 to provide federal grants to states and COMMUNITY EDUCATION agencies for "educational, recreational, cultural and other related community . . . services, in accordance with the needs, interests, and concerns of the community through the expansion of community education programs." In addition to providing direct grants for community education programs, the act also provides grants to colleges for community education training and research.

community service An elementary and secondary school activity for students to serve in any school-approved volunteer organization that serves the community. Some public and private secondary schools make it a requirement for graduation that students participate in a fixed number of unpaid hours of community service for one school year—usually 60 hours, or the equivalent of a one-semester course. Students in some communities have

challenged the community service obligation in court, charging that it violates their rights under the 13th Amendment, which abolished slavery. The courts have rejected the argument, however.

Company for the Propagation of the Gospel in New England A charitable group formed in 1649 by the Puritan Parliament and London merchants to raise funds to convert New England Indians to Christianity. The Puritans in New England had been less than successful in proselytizing Indians. Conversion not only meant baptism and acceptance of Puritan Christian beliefs and behavior, it meant the experience of "saving grace," which required a knowledge of the Scriptures at a depth not possible without fluency in English.

By 1640, there were few Indian converts, and agents of the (Massachusetts) Bay Colony, led by the Reverend JOHN ELIOT of Roxbury, petitioned Puritan leaders and merchants in England to raise funds to bolster efforts in the colonies to convert Indians. Eliot arrived in New England in 1631 and, for the next 56 years, served as teacher-minister of a new church in Roxbury. During that time, he learned Algonquian, preached to the Algonquians in their own language and, in 1663, translated the Bible into Algonquian.

For nearly 30 years, throughout Puritan rule and well after the Restoration, the society raised hundreds of pounds annually to support Eliot's work, which consisted of buying clothing, building materials and tools for Indians; paying salaries of ministers, teachers and missionaries who worked among the Indians; and paying for the printing of an Indian Library in Algonquian.

By 1675, about 2,500 New England Indians, or about 20% of the native population, had converted to Christianity, and the society decided to finance an Indian College at Harvard. A lack of qualified and committed stu-

dents, however, doomed the Indian college and Eliot's and the society's efforts. Eliot died in 1690, and the society's work ended.

comparative education A relatively limited field of study within the graduate education curriculum that deals with comparison in formal education systems in different countries and societies. In recent years, the United Nations has been compiling comparative education statistics to help researchers in the field and promote international understanding among leaders in education.

compensatory education Instructional programs designed to overcome the effects of poor education associated with poverty and racial segregation. The most renowned of these is HEAD START, a government-sponsored preschool program that has helped provide millions of socially disadvantaged youngsters with learning skills generally lumped together as "school-readiness." In addition to preschool programs, compensatory education is available in many schools throughout the elementary and secondary school years and in most public colleges.

Compensatory education dates back to the passage of the CIVIL RIGHTS ACT OF 1964, which ordered a survey "concerning the lack of availability of equal educational opportunity by reason of race, color, religion, or national origin in public educational institutions at all levels. . . ." Two surveys followed. In 1965, the COLEMAN REPORT studied 600,000 children at 4,000 schools and found that the academic achievement of minority children was one to two years behind that of whites in first grade and three to five years behind in the twelfth grade. A second study by the CIVIL RIGHTS COMMISSION confirmed the Coleman Report findings. On that basis, Congress passed the ELEMENTARY AND SECONDARY EDUCATION ACT OF 1965, which provided funds for compensatory education programs to close

the educational gap between the races and between the poor and rich.

Since then, Head Start alone has served about 20 million children. More than 1 million four-year-olds apply to Head Start each year. At the primary and secondary school levels, CHAPTER 1 of the act provides more than \$6 billion a year to improve the academic skills of poor children by offering remedial work in basic subjects. Chapter 1 reaches about 6 million children in two-thirds of the nation's schools. About 70% of the students are in elementary schools. Although there are no enrollment figures for remedial instruction at the college and university level, about 95% of all four-year and two-year public colleges and 65% of all private colleges offer such programs.

Since its inception, compensatory education has been the target of considerable criticism. Critics of Head Start, for example, point out that the program relies on pulling students from their regular classes for 30 minutes of remedial work. Meanwhile, the students fall behind in the classes they would normally have been attending. Others say that its annual budget of \$4 billion to \$5 billion has yet to produce any lasting results. Proponents insist it results in lower school dropout and juvenile delinquency rates.

Although critics of compensatory education at the primary and secondary school levels agree on the value of standard remediation programs, many oppose bilingual education as a subversion of the historic "AMERICANIZATION" process that teaches immigrant children to become U.S. citizens.

At the college level, compensatory education began in the late 1960s, as colleges compensated for historically discriminatory admissions practices by admitting disadvantaged students whose primary and secondary school education had not prepared them for college-level work. To help such students, the colleges introduced costly compensatory remediation and one-to-one tutoring. Critics, how-

ever, contend that it is not the function of a college to provide education that should be available at the primary and secondary level and that doing so deprived academically qualified students of the higher-level education colleges should be providing.

competency-based education A system of instruction tied to mandatory academic achievement that students must demonstrate before being permitted to progress to the next level. Alternatively called performance-based education or standards-based education, competence-based education is nothing new to American education, despite the furor it caused during the late 1990s and early 2000s. Boston introduced competency-based education in its schools before the Civil War, and New York State introduced required minimum competency tests called Regents Examinations in all public schools at the beginning of the 20th century.

Akin to the more current concept of OUTCOME-BASED EDUCATION, competency-based education governs student progress throughout the school years by requiring each student to obtain a minimum score on competency examinations in each subject before progressing to the next level in that subject. In addition, each student must pass a minimum number of such tests each year before being promoted to a higher grade or graduating. For younger children, minimum-competency tests may simply measure learning readiness or proficiency in basic skills. Minneapolis, for example, once held back 10% of its kindergartners who scored too low on the readiness test for first grade.

Competency-based education may be limited to a specific subject or be imposed throughout a school, a school district or an entire state. Most states and schools use standardized tests such as the CALIFORNIA ACHIEVEMENT TEST, the IOWA TESTS OF BASIC SKILLS and the Terra Nova Comprehensive Tests of Basic Skills to assess

student competency in basic subjects. Although most tests rely on objective questions (true-false, multiple-choice, etc.), some measure competency by asking for students to write original essays.

Proponents of competency-based education insist it is important to measure whether schools are doing their jobs and teaching children the knowledge they need each year to succeed the following year and eventually function in the job market.

Forty-eight states and the District of Columbia administer standardized tests in almost every subject area to determine whether students have achieved competency in each subject and are worthy of promotion or graduation. Although students in about one-third of the states produce relatively high scores, their counterparts in the rest of the nation often score so poorly that many schools are forced to ignore test results and promote or graduate students to the next grade with their age mates (see SOCIAL PROMOTION). In 1999, several dozen New York City public school teachers actually changed their students' incorrect answers on test sheets to assure that the children would pass the tests. Two-thirds of Chicago's third- and sixth-grade students had to attend summer school after the first tests were administered, and half had to repeat their grades in the fall after a full summer of instruction. Only one of 10 Arizona high school sophomores passed that state's math test, while only 7% of Virginia students of all ages passed that state's tests. Wisconsin students did so poorly that the state abandoned testing requirements temporarily. Massachusetts lowered the passing grade on its English and math tests to allow the graduation of 83% of Latino students, 80% of black students, 43% of white students and 41% of Asian students. New York also reduced minimum passing grades. In Los Angeles and San Diego, half the students would have failed California's competency tests had schools not lowered standards for passing.

Critics of competency-based education point out that some ambitious teachers spend more time "TEACHING THE TEST"—that is, practicing questions with students from tests of previous years—than they do teaching students to read, write and discuss ideas and develop higher order thinking skills. A second criticism of competency-based education contends that it does little to address the question of ACADEMIC QUALITY. In effect, competency-based testing penalizes students for the failure of teachers and schools to establish and maintain acceptable levels of academic quality. Rather than investing in costly testing, say critics, legislators should raise academic quality of schools by investing more to relieve overcrowding in classrooms, improve teacher training, modernize and expand school plants and teaching materials.

An even harsher criticism of competency-based education cites the lack of evidence of academic improvement by the majority of children who are left back after failing minimum-competency tests. Indeed, one study (*Flunking Grades* [1988]) found that rigid promotion requirements may retard academic progress. The study found that teenagers who repeated early grades had significantly higher high school drop-out rates than comparably skilled children in schools that promoted them with their classes each year. The correlation between retention and high drop-out rates has harsh social consequences in many communities because of the high failure and retention rates among poor and minority students.

(See also ACADEMIC STANDARD; GOALS 2000; STANDARDIZED TEST.)

competency-based teacher education (CBTE) A system of teacher training that requires teachers to learn and demonstrate a required body of knowledge, teaching skills and teacher attitudes. Also called performance-based teacher education (PBTE), competency-based teacher education is an effort to raise the

level of quality among the nation's public school teachers. SCHOLASTIC ASSESSMENT TEST scores of graduating high school seniors who plan to enter teaching average 5.1% below the average scores for all college-bound students. Moreover, a 1998 study by the AMERICAN COUNCIL ON EDUCATION found that at least half the students in American public secondary schools (grades 7 through 12) received science instruction from unqualified teachers. The study found that fewer than half the teachers in the nation used computer software to buttress classroom instruction. State by state, the study found teacher incompetence at the heart of declining student academic achievement. In Massachusetts, 60% of public-school teacher candidates failed the basic teacher competency test. Thirty percent failed a basic test in reading and writing, while failure rates in various subjects ranged from 63% in mathematics to 18% in physical education. In New York City, 31% of teacher candidates failed the certification test in the liberal arts and the sciences. About 21% failed the English test, 47.3% failed the mathematics test and 48.3% failed the physics test. Failure rates in other areas ranged from about 20% in social studies to 37% in both biology and earth science. CBTE has been slow to take hold, however. Fewer than half the 1,300 teacher-education programs in the United States are accredited by independent ACCREDITATION organizations.

completion test A commonly used type of objective test which asks the student to "fill in the blank" by providing a missing word or phrase in an incomplete sentence.

composition A piece of original student writing, usually an exercise in essay form that is basic to the teaching of writing skills in elementary and secondary schools. Successful instruction of composition begins in kindergarten by encouraging student imagination

and oral skills. As students recount fictional stories or real-life experiences aloud, the teacher writes each story in large bold letters and then asks the author to copy it, thus teaching the correlation between words and written symbols and helping the children acquire the manual dexterity needed for writing. As children progress through the elementary and early secondary school years, compositions lengthen, and students gradually learn the rules of grammar, sentence structure, paragraph construction, essay form and outlining.

comprehension The complex mental process by which a student understands the meaning of written, spoken, visual, emotional or other sensorily transmitted messages. Usually taught through prereading and postreading discussions, comprehension is the primary goal of all formal education, with reading the primary conduit. Like knowledge and memory, comprehension increases with development, maturity and training. The teaching of comprehension begins in kindergarten with analysis of character traits after hearing a story and the mapping of a possible future course of events for those characters.

As they progress, kindergarten and early elementary school teachers encourage children to make up their own stories after seeing a picture and to summarize in a few sentences a story they hear or read. Inviting students to retell stories in their own words, whether orally or in writing, and to pinpoint causes and effects are basic methods of teaching and measuring comprehension in the subsequent elementary and secondary school years. By fourth grade, students with standard comprehension skills should be able to distinguish between the main and subordinate ideas in a reading, to select the climactic statement or event and to describe the feelings and emotions of the characters.

Secondary school comprehension skills include the ability to describe the main idea of

a reading; the unstated ideas, places or settings; and the reasons for character actions. The ability to answer questions correctly, follow directions, paraphrase, assess and recall are all elements of comprehension.

Comprehensive Child Development Act

An act passed by Congress, but vetoed by President Richard M. Nixon in 1971. An outgrowth of the ECONOMIC OPPORTUNITY ACT OF 1964, also known as the WAR ON POVERTY, the Comprehensive Child Development Act authorized federal assistance for health, education and welfare services to all qualified children whose parents applied for such services. The aim of the act was to ensure equity in education, health and other services for deprived children.

Comprehensive Employment and Training Act (CETA)

A 1973 federal law that revised and regrouped various job training programs scattered throughout the Department of Labor and the Department of Health, Education and Welfare after the dismantling of the OFFICE OF ECONOMIC OPPORTUNITY. Most of the program grew out of the federal government's "WAR ON POVERTY" and provided government funds to retrain unemployed workers with obsolete or no job skills. As the escalating war in Vietnam absorbed more of the government's resources, the Office of Economic Opportunity was dismantled, and responsibility for the retraining programs was scattered to what seemed the most appropriate government agencies. The result, however, was an increasing number of conflicts between agencies seeking funds for the same purposes. Passage of CETA sought to resolve those conflicts by placing all the programs under a single controlling agency.

comprehensive examinations A set of written or oral tests to measure a student's total command of a subject—usually the student's major subject at college or graduate school.

Not required at all colleges or universities, comprehensive examinations are normally administered only once, just before graduation and the awarding of degrees. Unlike final examinations, which measure knowledge in a single course, comprehensive examinations are usually graded "pass" (with or without "honors") or "fail." Graduation and the receipt of a degree and cum laude honors are contingent on passing.

comprehensive high school

A uniquely American secondary school that enrolls all students from a geographic area and offers a broad choice of curricula in three general areas: pre-college academic, VOCATIONAL and "GENERAL." Some comprehensive schools have industrial and business education programs as well. Comprehensive high schools developed at the turn of the 20th century to accommodate the varied needs of a widely diversified population of American-born and immigrant students. In recent years, however, such schools have come under harsh criticism for lacking clear goals, offering too broad a curriculum for too wide a variety of students and tolerating a steady decline in the quality of education.

In 1967, former Harvard University president JAMES B. CONANT issued a critical report on the more than 100 comprehensive high schools he evaluated in 26 states, saying that only eight were fulfilling their educational goals. Many communities responded by splitting larger comprehensive schools into smaller specialized units that meet single educational goals for specific groups of students.

(See also ACADEMIC QUALITY.)

comprehensive musicianship

An approach to secondary school musical education that combines the study of history of music, music theory and instrumental music in the elementary school years, to broaden the musical development and interests of students.

Comprehensive Tests of Basic Skills A battery of minimum competency tests to measure student competence in areas considered basic for academic learning—namely, reading, mathematics, language, reference skills, science and social studies. Seven levels of tests are available for students in all elementary and secondary school grades.

compulsory education The legally required instruction of children in government-approved facilities by government-approved teachers. Although the U.S. government has no compulsory education law, all 50 states require children between the ages of 5, 6, 7 or 8 and 14, 15, 16, 17 or 18 to attend school or receive instruction in an approved substitute facility. Many states permit parents to provide HOME SCHOOLING under certain circumstances.

Compulsory education in America dates back to 1642, when the Massachusetts Bay Colony passed a law empowering the selectmen of each town “to take account from time to time of all parents and masters, and of their children concerning their calling and employment of their children, especially of their ability to read and understand the principles of religion and the capital laws of this country.” The law authorized them, with the consent of any court or magistrate, to take any children “as they shall [find] not to be able and fit to employ and bring them up.” Five years later, Massachusetts stiffened its earlier law by passing the famed School Act of 1647. Called the “Old Deluder Satan Act,” it required every town with 50 or more householders to open a PETTY SCHOOL to protect children against “the fiery darts of Satan.” The act required every town with 100 families to open a LATIN GRAMMAR SCHOOL as well.

In 1650, Connecticut passed a law requiring that children and servants be taught to read English, that they be taught the law, that they be catechized weekly and that they learn husbandry or a profitable trade. New Haven, then



Compulsory education laws helped put an end to child labor in factories such as this glass manufacturing plant, where children in their early teens worked near the blast furnaces during the early decades of the 20th century. (*Library of Congress*)

a separate colony, passed a similar law in 1655, New York in 1665 and Plymouth, which did not merge with Massachusetts until 1691, instituted compulsory education in 1671. In 1683, Pennsylvania required that all parents and guardians of children “shall cause [them] to be instructed in reading and writing, so that they may be able to read the Scriptures and to write by the time they attain to twelve years of age; and that then they be taught some useful trade or skill, that the poor may work to live, and the rich, if they become poor, may not want; of which every county court shall take care.” Virginia required parents and masters to send their children and servants to weekly religious instruction at local churches, where they also learned to read.

Although almost universal during the colonial era, compulsory education disappeared

after the Revolutionary War and the dismantling of English controls. Most families needed their children to help them work the fields or otherwise contribute to family income, and the new state governments were not prepared to upset the economic order by forcing children to spend their working hours in classrooms.

Although Massachusetts was the first state to establish free public schools in the 1830s, the only incentive to attend them was a law forbidding any company to hire children under 15 who had not attended school for at least three months during the previous calendar year. In 1852 Massachusetts passed the nation's first true compulsory education law, requiring parents to send their children to school for a minimum of six months a year.

Children remained America's cheapest form of labor into the beginning of the 20th century, and it was not until 1918 that the last of the 48 states then in the Union passed compulsory education laws—over the strong objections of planters, industrialists and parents who depended on low-paid children for their economic survival. These were not fully enforced until 1933, when Congress passed a child labor law making it a federal crime to employ workers younger than 16 in most nonfarming occupations and younger than 18 in hazardous industries.

(See also CHILD LABOR.)

computer-assisted instruction (CAI) The teaching of subject matter with the help of specially prepared computer programs or software. Computer-assisted instruction is available in virtually every academic and many nonacademic subjects. Each program provides a sequence of data, each of which calls for a specific student response. If the student responds correctly, the computer progresses to the next step in the instructional sequence. If the student responds incorrectly, the computer makes the student try again.

CAI is available in a variety of formats, the simplest of which is the unidirectional, computer-based instruction that can only move the student forward along the instructional sequence. The more complex "intelligent computer-assisted instruction" (ICAI) has a variety of instructional paths that vary according to the student's ability as measured by the type of responses made. ICAI analyzes each student response, whether correct, partially correct or incorrect, and chooses an instructional sequence appropriate for that student, altering course as necessary with each response. Its artificial intelligence, in other words, allows it to adapt to the student's needs and abilities in the same way as a human teacher might. ICAI is also used to administer and score many standardized tests, including graduate school entrance examinations.

computer literacy The mastery of storing, retrieving and processing data on computers. Most schools begin teaching some degree of computer literacy in kindergarten or first grade, depending on each child's finger dexterity. Schools expect students to be computer literate when they enter middle school and be at ease using computers and accessing Web sites via the Internet for learning new materials, preparing homework, doing original research and creating useful programs of their own. By 2005, 88% of American college students owned at least one computer, and 27% owned two—usually a laptop and desktop. American colleges deemed computer literacy so essential to academic success in higher education that the Educational Testing Service developed two new tests to measure the facility with information and communication technology (ICT) of students entering junior year of college: the ICT Literacy Assessment Core Level and the ICT Literacy Assessment Advanced Level. Scored from 400 to 700 and lasting 75 minutes, the tests measure students' computer and related tech-

nology skills in seven areas and will be used to determine whether students need remediation and in which areas. California State University was the first to give the exam, to 3,300 students on 23 campuses, insisting that computer competency was as important as math and reading competency.

computers In education, basic tools for learning that not only store, retrieve and process data, as they do for other industries, but can also deliver certain types of instruction more efficiently than teachers. One of the most important teaching tools ever developed, the computer is a multimedia instructional device with the potential of bringing the entire body of world knowledge into the classroom in a variety of formats at the touch of a button and, on screen, transport students to any time period in history almost anywhere on Earth.

Developed in the mid-20th century, computers were slow to be embraced by elementary and secondary school educators, who, indeed, misused the first computers as costly electronic "flash cards" in rote drills or by adding computer usage to the curriculum much as touchtyping had been added to teach an earlier generation how to use the typewriter.

As a learning tool, the computer uses standard text materials, graphics, animation, simulation and audio and visual materials to provide each student with individualized instruction. Working at individual learning stations, students can pace themselves working interactively to master any given topic, exercise or problem. The computer provides instant responses to student input and extra assistance and new instruction when it is most useful, instead of forcing students to wait several days to receive hand-corrected papers from teachers.

The interaction between student and computer allows every student to be an aggressive seeker of knowledge and have a direct hand in his or her own education, instead of sitting pas-

sively in classrooms while more outspoken students dominate classroom discussions. Computers free teachers to serve as mentors rather than conduits of factual information readily available from other sources. In addition to individual instruction, computers also provide students with on-line telephone links via the Internet to instructional Web sites and research facilities across the United States, thus expanding student research facilities beyond the school library. Proponents of expanded use of computers in the classroom also liken them to the games introduced in the late 19th century by such progressive educators as JOHN DEWEY and JEAN PIAGET, who believed that children learn far more through active play than they do as passive recipients of facts delivered in lectures.

Individual student computers equipped with modems can access an infinite number and variety of databases anywhere in the world via the Internet and World Wide Web. In addition to conventional teaching accessories, computers can access an infinite number of options for learning materials, including CD-ROM, DVD and laser disks that display vast amounts of data, including illustrated texts of entire encyclopedias and other reference works, entire library and museum collections, and other extensive databases. CDTV (compact disk television) is akin to the CD-ROM in terms of data storage, but adds motion, which is transmitted in the form of television films. CD-I (compact disk-interactive) and VIS (video interactive system) systems allow students to interact with CD-ROM and CDTV materials by asking questions and receiving answers. Photo CD allows teachers or students to transfer and store permanently hundreds of photographs onto a compact disk for viewing on television screens or on individual student computer screens.

After classrooms were "wired" in the late 1990s and early 2000s to permit computer operations, students were able to access, both

individually or simultaneously with their class, a far greater variety of textual and audiovisual instructional and reference materials than in traditional classrooms. Teachers in wired classrooms can transmit printed materials to each student computer, along with still pictures and videos that display, dramatize and teach almost all aspects of art, history, literature, music, science and the rest of the academic curriculum. In addition, computers in wired classrooms provide students with creative tools to produce literary works, films, graphic or creative art, music, engineering and architectural plans, scientific experiments and a wide variety of other works. With wired-classroom connections to the Internet, teachers can guide their students to Web sites of virtually every great museum in the world, access research materials from every library, visit operas and concert halls, visit historic sites and hold discussions with scientists or other authorities. Teachers can also use computer-connected "WHITEBOARDS," mounted on classroom walls next to marker boards, to display computer-generated instructional materials, which students can download on their computers instead of having to scrawl notes on paper pads.

At the administrative level, wired classrooms with links between school offices and individual student computers may allow students to take examinations on their individual computers and have their tests graded instantly, before the students leave their classrooms. Grades are automatically registered in teacher and school records. The computer has also allowed elementary and secondary schools and colleges and graduate schools to expand curricula and widen every student's educational reach through on-line DISTANCE LEARNING programs that can be delivered to any student with a computer anywhere in the world over the Internet. By 2001, American public schools were equipped with an average of one computer for every five students, and 83% of Amer-

ican elementary and secondary school students were using the Internet at school. More than 50% of all public school students had computers at home to use for homework assignments. More than half the elementary school students under six were using computers both at school and at home; 85% of students six to nine years old were using computers at school, and 62% were using them at home for schoolwork. About 90% of students over 10 used computers at school through the middle school and high school years, and 70% of those students used computers at home for schoolwork. The primary obstacle to such worldwide dissemination, of course, has been the cost of computers. In 2005, however, MASSACHUSETTS INSTITUTE OF TECHNOLOGY (MIT) unveiled the prototype of a laptop costing about \$100 that runs on batteries, can be recharged with a crank, and connects wirelessly to the Internet. MIT created a nonprofit organization called One Laptop per Child to coordinate development and to work with government leaders to distribute the computer to schools around the world.

(See also DISTANCE LEARNING; INTERNET; TELE-LECTURE; VIRTUAL CLASSROOM.)

Conant, James B. (1893–1978) American educator, scientist and statesman, whose criticisms of American schools are generally credited with having started the post-World War II educational reform movement. A renowned chemist, Conant spent 40 years at Harvard University, beginning in 1913. He served as president of Harvard from 1933 to 1953, when President Dwight D. Eisenhower appointed him U.S. high commissioner to West Germany (1953–55) and later ambassador to West Germany (1955–57). Although his book *Understanding Science* was a standard college text, he gained his greatest public renown as a critic of American education and author of the famed Conant Report, a study completed in 1958 of 103 American comprehensive high schools in

26 states. Sponsored by the CARNEGIE CORPORATION OF NEW YORK, the report recommended that high schools offer a general academic education to all students, special elective courses for students who plan to work after high school, and advanced academic courses for college-bound students. He urged schools to establish special programs for slow learners and for the academically gifted, and he urged school districts to reorganize to permit closure of all schools with fewer than 100 students. He called for more individualized instruction, for the hiring of at least one guidance counselor for every 250 to 300 students and for improvements in school–community relations.

concentration In one sense, the ability to focus on the task at hand and ignore distractions. A necessary skill for academic success, concentration is a self-imposed, mental receptivity that is not fully mastered until mid- to late adolescence. Lack of concentration, however, is a serious study problem which teachers attempt to overcome by limiting the time spent on any one task at a given time and gradually lengthening that time by imperceptibly small increments. AUDIOVISUAL AIDS have proved useful tools in teaching concentration, as have the introduction of games and activities that require learning basic skills to participate. (See also LABORATORY SCHOOLS.)

At the college level, the term *concentration* has a second, somewhat less precise meaning that is usually synonymous with the terms MAJOR or MINOR. Concentration may also refer to a specialization within a broad area of studies, as in the case of concentration in accounting.

Conceptually Oriented Program for Elementary Science (COPES) An innovative elementary school science curriculum developed at New York University in 1965 and designed to promote scientific literacy among children, without resort to reading materials.

Divided into five board areas, COPES consists of a series of teacher manuals and newsletters that show how to organize activities that help children learn by personal, hands-on observation, exploration and experimentation. The five COPES categories are entitled the Structural Units of the Universe, Interaction and Change, Conservation of Energy, Degradation of Energy, and the Statistical View of Nature.

concrete materials Three-dimensional objects that young children can arrange and rearrange with their hands to enhance understanding of abstract concepts in mathematics and other subjects. Especially appropriate for six-, seven- and eight-year-olds, concrete materials may include blocks, sticks, chips, beads, raisins or any other easily manipulated objects; the most readily available manipulatives for most children are their fingers. Educators have found that children of eight or younger learn abstract mathematical concepts more easily by handling concrete materials than they do by writing on printed pages. Crossing out one of six objects on a printed page, for example, does not produce the same retention of the mathematical concept of $6 - 1 = 5$ for a child as eating one of six raisins or removing one of six cubes from a set of blocks.

concurrent enrollment The growing practice of enrolling in courses at one or more secondary institutions of higher education while enrolled at a primary, degree-granting institution. About 33% of American college students now take one or more courses either in person or on-line from colleges other than the one from which they will earn their bachelor's degree. About half such students do so to complete their degree requirement sooner, and 17% say they do so because they wanted to take easier courses.

(See also EARLY COLLEGES; SWIRL PATTERN; TRANSFER STUDENTS.)

conditioning theory of learning A theory of learning developed by Russian Nobel physiologist Ivan Petrovich Pavlov, who found he could teach laboratory animals new behavior by associating it to their automatic responses to normal stimuli. Pavlov found that by sounding a bell (conditioned stimulus) every time he sprayed meat powder (unconditioned stimulus) into a dog's mouth to produce automatic salivation (unconditioned response), the dog soon learned to salivate at the sound of the bell alone (conditioned response), in the total absence of any meat powder. Such classical conditioning became the heart of behaviorist learning theory, which ascribes much learning among humans to the forming of similar stimulus-response bonds and chains. PROGRAMMED INSTRUCTION is but one of the pedagogical techniques to emerge from behaviorist theories.

Congregational Church A New England derivative of Puritanism that vests all church authority in the congregation of each church. From their first arrival in the colonies, Congregational churches were deeply involved in education because of their unique practice of naming two ministers to each congregation—a pastor in charge of church activities and a teacher to deliver sermons and catechize children. Congregationalists were responsible for erecting the first schools in the American colonies. In 1647, they enacted the Massachusetts Bay Colony School Act, which required every town with 50 householders or more to open a PETTY SCHOOL and every town with 100 families or householders to open a GRAMMAR SCHOOL. The law set a standard that spread throughout the colonies.

Congregationalism contrasts with Episcopalianism and Presbyterianism less in the area of creed than in church organization. All authority in the Congregational Church rests with each congregation, which has full authority to appoint its own minister and to admit or expel members. Episcopalians, on the other

hand, place church authority in the hands of an order of bishops, while Presbyterians have a hierarchal structure which rises from the local congregation to the presbytery, the synod and the general assembly, with each ascending body made up of representatives from the bodies beneath.

The origins of Congregationalism go back to late 16th-century England, where Robert Browne charged Church of England leaders with corruption and urged true Christians to separate and form autonomous congregations. Called Separatists, his followers eventually took their beliefs to New England, where they founded their first church in Salem, Massachusetts, in 1629; by mid-century Separatists were the dominant element of the settler population. Although scornful of central church authority, New England Congregationalists were conservatives and remained so into the 20th century. Grounded in the belief that all are born tainted with the original sin of Adam and Eve, Congregational teachers introduced the pedagogical use of whips and ferrules to "beat the devil" out of children, whose incorrect answers in class were the result of "Satan's darts."

Congregationalists restricted church membership to those adults who experienced a personal conversion or spiritual communion with God that resulted in a commitment to serve God. The "puritanical" nature of the church beliefs, however, produced dissenters who formed or joined a variety of other Protestant denominations. UNITARIANS disputed the existence of the Trinity; BAPTISTS argued that infants were born innocent of all sin; PRESBYTERIANS and Anglicans (see CHURCH OF ENGLAND) insisted that churches be placed under the authority of trained theologians.

At HARVARD COLLEGE, dissent with Unitarians over the question of the Trinity sent conservative Congregationalists storming out of Cambridge to New Haven, Connecticut, where they established rival Yale College, in 1701.



Conservative Congregationalists founded Yale in Branford, Connecticut, in 1701 as a divinity school to provide Connecticut churches with ministers. Originally called the Collegiate School, it was moved to New Haven in 1716 and renamed in 1718 after its benefactor, Elihu Yale.

In the early 1800s, the Congregationalists split into Unitarian Congregationalists (or, simply, Unitarians) and the conservative Standing Order. Later, as the American population moved westward, liberal Congregationalists cooperated with other Protestant denominations in a variety of missionary and educational efforts. In time, through mergers and assimilation, Congregationalism per se ceased to exist. Although individual, autonomous Congregational churches still trace their origins to the colonial period, the majority of Congregational churches are now part of the United Church of Christ.

Connecticut One of the original 13 colonies to secede from Great Britain and the fifth state to ratify the U.S. Constitution. It was the second state in the American colonies after MASSACHUSETTS to adopt universal public education and, by every standard, retained the best

public school system in the United States, with ceaseless year-to-year efforts to improve by the schools themselves, by parents and by the state legislature and state officials. Academic quality of the state's public schools has slipped badly from 2000, when they were the nation's best. By 2005, Connecticut schools ranked 15th in the nation in academic proficiency, although a series of school reforms—and a drop in poverty from 12% to 9.6%—seemed to be restoring academic quality in the younger classes. Fourth graders ranked fifth in the nation in reading proficiency that year and ninth in math proficiency in the national testing. The slippage of previous years was evident in eighth graders' scores, however, which ranked 23rd in the nation in reading and 21st in math. Moreover, the state had the 16th-highest high school drop-out rate, more than 25%. About 30% of all students are minority children—unchanged since 2000.

The state has nearly 350 private day and boarding schools, with an enrollment of more than 70,000—many of them out-of-staters. The state is the home of 19 private four-year colleges and universities, including Wesleyan and YALE. The state has 11 public four-year colleges and universities and 12 public two-year colleges. The flagship University of Connecticut, the land-grant college at Storrs, has more than 20,000 students, and Connecticut State University has 35,000 to 40,000 students at four campuses in New Britain, Willimantic, New Haven and Danbury. Graduation rates at four-year colleges are exceptionally high: 62.5%

As a colony, Connecticut was quick to establish a system of schooling for its children. In 1647, the Massachusetts Bay Colony had enacted its famous School Act, which required every town with 50 householders or more to open a PETTY SCHOOL and every town with 100 families or householders to open a GRAMMAR SCHOOL. The law set a standard that spread throughout the colonies, with Connecticut passing a similar act in 1650. The Connecticut legislation required children and servants to be taught to read English and to understand the Scriptures and the colony's capital laws. In addition they were to be catechized weekly and taught husbandry or some other profitable trade.

After U.S. independence, Connecticut, like the other colonies, virtually abandoned education for all but the children of the wealthy. Other children were needed to labor in the fields, mills and mines. In 1838, however, HENRY BARNARD, a Whig member of the Connecticut legislature, persuaded the legislature to enact a model school bill. An advocate of practical education for occupations such as bookkeeping, surveying and mechanics, Barnard saw universal education as a means of providing industry and agriculture with skilled workers who would help maintain his nation's parity in international commerce. Enactment

of Barnard's bill made Connecticut the second state to provide public education. Unlike the earlier system in Massachusetts, however, Connecticut's system was not free. Parents had to pay according to their means—a system that evolved into the current system of property taxes.

connectionism theory A theory of learning developed by Columbia University educator and psychology professor EDWARD L. THORNDIKE. Thorndike posited that learning is nothing more than a bond or association based on pleasure or pain. The bonds between behavior patterns and pleasure (satisfiers) are retained, while bonds that bring pain or discomfort are rejected. He applied his theory to education by advising teachers, "Exercise and reward desirable connections; prevent or punish undesirable connections."

conservation education A broad area of study in the science curricula of many schools to promote better management of natural resources. In the primary and secondary school curriculum, conservation education is introduced as an element of social studies and science. At the college level, conservation is integrated into such preprofessional courses as forestry, freshwater management, soil conservation, and so on.

conservatory A specialized school for the fine arts. More often associated with music, conservatories derive their name from Italian orphanages, or conservatorios, where the church conserved, or saved, abandoned children and usually emphasized singing and music as a form of education and recreation.

Constitution Day A national day for American educational institutions to commemorate the final signing of the U.S. Constitution by members of Congress on September 17, 1787.

Although not a national holiday, the law creating Constitution Day requires every American school receiving federal aid—from public elementary schools through university graduate schools—to spend September 17 each year teaching the Constitution. Created in 2005 by Senator Robert C. Byrd (D, W.Va.), the law also requires all federal agencies to provide federal employees with training materials on the Constitution. Known for carrying a copy of the Constitution in his pocket, Byrd won support for creating Constitution Day after citing the results of U.S. DEPARTMENT OF EDUCATION tests that found a dismally low 11% of public high school seniors in America proficient in history. A 1999 survey of 556 graduating seniors from the nation's top 50 colleges and universities found two-thirds unable to identify the American commanding general at the Battle of Yorktown.

The National Archives and Records Administration, the Bill of Rights Institute and the U.S. Department of Education all offer free resources to schools, teachers and students to enhance Constitution Day learning activities.

Despite the poor quality of history education in American schools and colleges, the imposition of federal teaching requirements under the Constitution Day law produced a chorus of protests from state education leaders, who said the Byrd initiative had usurped powers over education from the states and opened the door for federal lawmakers to mandate other lesson plans. The Tenth Amendment of the Constitution specifically cedes to the states all governmental power not specifically assigned to the federal government by the first nine amendments. Education is not mentioned in those amendments.

Constitution of the United States The document ratified in 1788 that provides the philosophic and legal basis for governing the United States and outlines the rights of its people. The Constitution's greatest impact on public education has been its failure to include

education as a basic right of all Americans. Both THOMAS JEFFERSON and Dr. BENJAMIN RUSH had proposed guaranteeing all Americans that right, and the idea also had the support of JAMES MADISON and BENJAMIN FRANKLIN. In his essay *On the Defects of the Confederation* (1787), Rush stated that it was "absolutely necessary that knowledge of every kind be disseminated through every part of the United States."

To that end, he and Jefferson suggested establishing a national, three-tiered system of public schools made up of district or township schools, state colleges and state universities, with students progressing to each tier according to their abilities. District schools would teach reading, writing and arithmetic; colleges would teach mathematics, sciences and foreign languages; and the state universities would teach law, medicine, divinity, philosophy, politics and economics. In addition, Rush proposed that the Constitution establish a federal university open only to graduates of state universities and designed to teach "everything connected with government." He proposed making a degree from the university a prerequisite for service in public office.

Representatives of the southern states rejected such proposals, however, for fear that the education of slaves would provoke their rebellion. Ultimately, it was a coalition of these southern agricultural and northern industrial interests, dependent on a combination of slave and child labor to produce cotton and textiles at prices competitive on the world market, that defeated this proposal. By omitting all mention of education, the signers of the Constitution left the question to the individual states, and, to this day, the U.S. government has no constitutional power to dictate national educational standards for American public schools. Recent laws granting such powers have yet to be tested in federal courts.

One constitutional amendment—the Fourteenth—has had considerable direct influence

on American public education. Ratified in 1868 in the aftermath of the Civil War, the 14th Amendment granted full citizenship for the first time to AFRICAN AMERICANS. When the southern states regained home rule in the 1870s, however, they segregated the races in separate schools, and, in 1896, the U.S. Supreme Court ruled in *PLESSY V. FERGUSON* that they had the constitutional right to do so. For the next 60 years, the separate-but-equal doctrine kept blacks segregated from whites in almost all areas of American life and condemned African-American children to substandard education in the North as well as the South. While the latter subjected black children to de jure segregation, the North subjected them to de facto segregation in equally inferior schools.

In 1954, the Supreme Court reversed the Plessy ruling. In the landmark *BROWN V. BOARD OF EDUCATION OF TOPEKA*, the Court ruled that separate schools, simply by their separateness, cannot be equal, and that segregation was unconstitutional.

consumer education A broad area of education usually incorporated into mathematics, social studies, HOME ECONOMICS and economics courses at the primary and secondary school levels and in economics courses at the college level. On the broadest level, consumer education teaches students how the U.S. economy and marketplace function and the consumer's role in those areas. On a more practical level, consumer education teaches students how to make specific trading decisions and manage personal and family finances. The federal government also provides a wide range of consumer education through its Consumer Protection Agency and the publications of various cabinet departments.

contact hours The number of hours a teacher spends in the classroom with students. Contact hours refer to formal classroom con-

tact only and do not include informal contacts advising or tutoring.

content analysis The evaluation of published educational materials to determine their suitability for a particular group of students. Content analysis may be made on a variety of different levels. One is pedagogical, to determine whether it complements classroom work and presents data in an understandable way. Content analysis may also search for inaccuracies, passages deemed too mature for students or misrepresentation of ethnic, racial and gender groups.

continuing education (See ADULT EDUCATION.)

contract, teacher The formal, binding agreement between a teacher and the school board or other legal representatives of the school in which the teacher is employed. In addition to remuneration, teacher contracts detail the conditions of employment and the duties of each teacher and the circumstances under which each party may terminate the agreement. Like all similar agreements, teacher contracts are governed by federal, state and local laws and cannot violate a teacher's constitutional rights. Depending on the individual school or district, contracts may be negotiated on behalf of all member teachers by a union. Contracts may be finite or continuing; continuing contracts assure teachers automatic reemployment from year to year unless they are notified by a specified date.

contract program An administrative plan prepared for a school district by a consulting group or service association such as the National Academy for School Executives. Contract programs may deal with professional development, collective bargaining or any other aspect of school administration.

control theory A theory of learning and teaching based on five basic human needs: survival, love, power, freedom and fun. According to control theory, students (and all human beings) constantly attempt to fulfill one or more of those needs, none of which is ever fully satisfied. To teach effectively, therefore, teachers should design all instruction to help students fulfill those needs.

convergent thinking A process of reasoning aimed at producing a single incontrovertible response. Most single-response tests require convergent thinking, as opposed to tests that measure creativity, analytical abilities and knowledge. The second group of tests require divergent thinking, which produces a variety of answers.

cooking At the early education level, a useful pedagogical tool to teach measurement, reading, writing, arithmetic, following directions and creativity. A standard part of the kindergarten curriculum at many progressive private schools, cooking is of value in the later primary grades for teaching certain essentials of physics and chemistry—especially changes in various types of matter when combined with heat, air and other substances. Cooking, along with woodworking shop, was an essential element of the kindergarten curriculum in the LABORATORY SCHOOLS inspired by educator JOHN DEWEY. In addition to their practical merits, equal and cooperative participation by boys and girls in both activities effectively impeded development of gender prejudices.

cooperating administrator A school principal, superintendent or director who serves as a mentor/teacher and provides field experience and training to an administrative intern.

cooperating teacher A full-time teacher who serves as teacher/mentor and provides

field experience and training to a student teacher.

Cooperative Agricultural Extension Service A U.S. Department of Agriculture educational division established in 1914 to provide instruction in HOME ECONOMICS, family management, child care, consumer affairs and human relations. The service has a small force of professional home economists, or home demonstration agents, who are employed by LAND-GRANT COLLEGES but who work out of local county offices. They provide on-site instruction to children, adolescents, adults and the elderly at schools, 4-H Clubs, nursing homes and elsewhere.

Cooperative Extension Service A U.S. Department of Agriculture agency established in 1914 by the SMITH-LEVER ACT to provide technical information and guidance to farmers and others living in rural areas. Cooperative Extension Service programs range from formal classes at LAND-GRANT COLLEGES to soil analysis for individual farmers. The service also provides a wide variety of booklets and other information on farming, gardening and HOME ECONOMICS.

(See also HOME DEMONSTRATION AGENT.)

cooperative learning A pedagogy developed in the 1970s that breaks classes up into small teams of students, with members of each team responsible for learning and teaching each other a body of material suggested by the teacher. Teachers try to shape each team so that member strengths and weaknesses complement each other. Team members interact much as they might on an athletic team, helping each other with problems, encouraging each other to achieve and learning by demonstrating. Members can call on the teacher for help at any time.

Cooperative learning frees the teacher to move from group to group and customize the

teaching to individual or group needs. When appropriate, the teacher may call the entire class together to focus on a common problem. Cooperative learning has been found to promote tolerance, interracial friendships, altruism and individual self-esteem—the last being a result of helping others learn and succeed.

Cooperative Project in Educational Administration (CPEA) A program funded by the W. K. KELLOGG FOUNDATION in the 1950s to improve the education and training of school administrators. CPEA originally established eight regional centers at Teachers College, Columbia University; Harvard University; University of Chicago; George Peabody College for Teachers; University of Texas; Ohio State University; University of Oregon; and Stanford University. The programs, which were funded for five years, were designed to make school administrators more aware of social trends and problems in American society and to provide them with the most up-to-date data and materials on education and educational administration.

cooperative vocational education A program of vocational education in which private industry and local colleges cooperate to provide students with a combination of classroom and on-the-job training. About 1,000 public and private colleges and universities have established cooperative education programs, which integrate daily college classroom studies with paying part-time jobs at local companies. About 75% of all community colleges, technical institutes and junior colleges participate in one or more employer-college partnerships to provide students with total learning experiences.

Some cooperative education programs rearrange learning schedules so that students alternate three-month periods of full-time study with three-month periods of full-time work, but most allow students to learn new methodology in morning classes and apply

what they learned on the job that afternoon. About 40% of students in such programs continue working for the cooperative education employer after graduation, while an additional 40% find jobs in other, directly related work. Among the hundreds of major companies involved in cooperative education are American Telephone & Telegraph Co., Duke Power Co. and Walt Disney Co. Programs offered include education in agriculture and natural resources, applied arts and crafts, business, computer science, health care, HOME ECONOMICS, construction and food service.

Cooper Union for the Advancement of Science and Art A unique, private, New York City institution of higher education, founded in 1859 by the inventor/philanthropist Peter Cooper (1791–1883) as a tuition-free academy and college for both women and men. It was one of the first colleges to prohibit racial discrimination. Deprived of a formal education, Cooper was apprenticed to a coach-maker at age 17. Eventually striking out on his own, he invented the first American steam locomotive and built an industrial empire that included iron mines, foundries and factories. In 1859, he founded Peter Cooper Union for the Advancement of Science and Art as an institution devoted to free public education—particularly for adults who, like himself, had been unable to obtain a formal education as youths. His endowment specified that the school was to remain “as free as air and water,” and it remains so to this day.

Open to both men and women—in itself an innovation in higher education of that day—it offered day and night schooling. By day it was both an engineering school and a women’s school of arts and sciences, and by night, a school of arts and sciences for mechanics, apprentices and other working men who lacked formal education. The curriculum spanned the academic and college levels, offer-

ing courses in languages, literature, oratory, telegraphy, design and engraving. It also housed an art gallery, a museum of rare inventions and a reading room, all of which were open to the public. Its public reading room became a popular public forum, where Abraham Lincoln gave his only campaign address in New York.

Now called Cooper Union for the Advancement of Art and Science, it remains the only private American college of its caliber that charges no tuition. The coeducational college has almost 950 undergraduates, of whom 66% are men and the rest women. About 30% of its engineering students are women—twice the average for comparable American colleges. It accepts only about 12% of applicants. Cooper Union offers undergraduate and graduate degrees in architecture, fine arts and graphic design, and engineering. There are fewer than 40 students in its graduate school. Although it remains tuition-free to U.S. residents, tuition for nonresidents is \$26,000 a year, and the school charges all students an annual fee of \$1,400 and, if necessary, \$9,000 for room and board.

Cooper v. Aaron A 1958 U.S. Supreme Court decision that denied the right of the Little Rock, Arkansas, school board to delay racial integration of public schools. After mob activities threatened the safety of black students at Central High School in 1957, President DWIGHT D. EISENHOWER federalized the Arkansas National Guard and ordered it to enforce federal court desegregation orders. The mobs dispersed and the black children returned to school. Several months later, however, the school board asked for a delay in implementing the desegregation order because it had seriously disrupted education at Central High. The Court refused, saying that state authorities could not abridge the right of American citizens not to be discriminated against and that mob actions were no

basis for depriving black children of their constitutional right to go to school.

(See also *AARON V. MCKINLEY*.)

copybook An elementary school textbook for teaching penmanship. Developed in the late 18th century, copybooks were universally used in American elementary schools until the middle of the 20th century. The typical copybook was a bound tablet of ruled pages, each of which contained a writing sample at the top and blank lines beneath it, on which the student copied and recopied the sample until he was able to duplicate it and exhibit perfect penmanship. ISAIAH THOMAS published the first widely circulated American copybook, *The Writing Scholar's Assistant*, in 1785.

core curriculum A group of courses required for successful completion of an academic program. A standard core curriculum required for graduation at many high schools consists of four years of English, three years each of mathematics and foreign languages and two years each of science and history. A core curriculum required for graduation from college might include freshman English and mathematics, three years of a foreign language and at least 12 semester courses in one's major. The major itself would consist of a core curriculum of at least 12 semester courses in that subject.

About 80% of American four-year colleges and universities claim they maintain a core of required subjects outside the student's major or minor subject areas. These core, or distribution, requirements force the student to study a minimum number of courses in each of a specific number of broad study areas, such as philosophy, science, literature, foreign languages and history.

(See also *CURRICULUM, COLLEGE; CURRICULUM, PUBLIC SCHOOLS*.)

core program A progressive education term referring to an elementary and secondary school system of interdisciplinary instruction in large time blocks, or cores. Thus, studies in a combined English-history course or a mathematics-science course might require a block of two or three class periods. Some schools divide their days into thirds, with each third serving as a core devoted to one interdisciplinary course.

Cornell, Ezra (1807–1874) American capitalist who founded Cornell University. A pioneer in telegraphic communication and founder of the Western Union Telegraph Co., he amassed a personal fortune that allowed him to devote much of his later life to public affairs. In 1863, he built a free library in Ithaca, New York, established a model farm and became a state legislator. In 1865, he became a trustee of the State Agricultural College, a struggling institution founded that year with a Land Grant (Morrill) Act land grant (see LAND-GRANT COLLEGES). A self-made man with lofty, idealistic ideas about human potential, Cornell endowed the fledgling school with \$500,000 of his own funds and decided to move it to a site he had purchased on the edge of Ithaca. It reopened in 1868 as an institution that combined the principles of other land-grant colleges with Cornell's own democratic principles and practical philosophy about the role of higher education.

In addition to the standard agricultural education of other land-grant colleges, Cornell offered, from the start, a liberal arts education and a wide range of practical courses in engineering to prepare its graduates for important roles in American industry. Cornell insisted that the institution be free of all religious ties, and he opened the doors to women and poor students.

Although he never held an official post at Cornell, he was a constant presence on campus, and he was able to lure such leading educators as biologist Louis Agassiz and poet James

Russell Lowell to lecture regularly to Cornell students. Now a university with more than 12,000, Cornell has seven undergraduate and four graduate schools. Its College of Agriculture and Life Sciences is the original land-grant college, while the rest of its divisions are private schools.

corporal punishment In education, physical pain inflicted on the body (or corpus) to discourage misbehavior in school. Although corporal punishment may date back to prehistory, its rationale in American formal education lies in the belief of colonial era clerics that children were born tainted with the original sin of Adam and Eve. Thus any and all misbehavior, ranging from disobedience to the most innocent academic errors, were viewed as the result of "Satan's darts," and it was the Christian obligation of teachers, parents and other authority figures to "beat the Devil" out of children.

Current use of corporal punishment is designed to force children to submit to authority and is based on the pain-pleasure principles inherent in Pavlovian theories of classical conditioning. For that reason, only 22 states still permit corporal punishment in primary and secondary schools, with about 10% of students in those states subjected to such punishment at least once each year, although the threat of lawsuits by parents is gradually doing away with the practice. Only 28 states forbid corporal punishment, while the rest leave the question to local school boards. Most courts have ruled the practice legal when it is "reasonable, not excessive, administered without malice and is understood by the child."

corporation colleges and schools Private schools and colleges operated by profit-making corporations for their employees. Such schools and colleges evolved as a replacement for the apprenticeship system in the 19th century, when machinery overtook manual crafts as the

primary producer of products. At the time, new workers learned their skills by the so-called pick-up method, whereby they started as helpers and learned on-the-job skills by trial and error and by questioning their more experienced peers.

As companies expanded, some instituted so-called vestibule schools, in which helpers were given formal instruction in their work before actually starting the job. Later, as companies grew still larger, vestibule schools grew into training departments, which provided groups of workers with formal, classroom training before they actually assumed their duties. Although vestibule schools taught new workers basic skills, they did little to overcome high rates of worker illiteracy that resulted from the lack of compulsory education in the United States. Moreover, the end of the Civil War saw waves of non-English-speaking immigrants reach American shores, and American companies found themselves inundated by large numbers of illiterate, innumerate workers at the very time when technological changes required better skilled workers. Indeed, worker errors stemming from illiteracy and innumeracy were deemed a major factor in a decline in quality and sales of American products on world markets.

In 1882, the Hoe Company, a pioneer manufacturer of printing machinery, became the first company to establish a formal school to train new employees in job-related skills. A decade later, department store magnate JOHN WANAMAKER went a step further by organizing the John Wanamaker Commercial Institute in Philadelphia to give his workers "a working education in the arts and sciences of commerce and trade." The curriculum included reading, writing, arithmetic, English, spelling, stenography, commercial geography, commercial law and business methods and administration. The institute had 24 teachers, some of them store executives, others Philadelphia school teach-

ers. New employees spent two mornings a week in classes; advanced employees two evenings a week, after a generous, free dinner in the store cafeteria. In addition, younger workers were offered exercise classes to teach them "discipline, organization, precision and obedience" and give them "health lessons of muscular training that give bodily strength without which successful mental work is impossible."

Wanamaker was more than pleased with the results of his institute. "Unintelligent and wasteful labor has lessened. The wisdom of cooperation and mutual helpfulness has been recognized. Knowledge of merchandise, its production, distribution and uses has been increased. Principles of control and government and organization have developed."

The institute was so successful it became a model for other companies. In 1900, General Electric Research Laboratory set up an educational program for its scientific and technical workers. Westinghouse Research Laboratory followed suit in 1903, as did American Telephone and Telegraph Company in 1907. Bell Telephone Company, meanwhile, sponsored a host of vestibule schools to train telephone installers and operators in what was then radically new telephone technology. In 1908, the farm equipment manufacturer International Harvester Company (now Navistar International) started a school for apprentices that soon included courses ranging from mechanical drawing to shopwork. The school willingly taught any course for which five or more employees enrolled. By 1913, there were enough corporation schools to form a National Association of Corporation Schools, whose statement of objectives proclaimed: "Corporations are realizing more and more the importance of education in the efficient management of their business. The company school has been sufficiently tried out as a method of increasing efficiency to warrant its continuance as an industrial factor."

Although World War I stalled the growth of company schools, they proliferated in the 1920s, with some proving far more effective than others. In general, those designed solely to promote worker loyalty, prevent strikes and combat incursions by labor unions proved far less effective than those devoted entirely to improving worker skills. Bell Laboratories, the research arm of American Telephone & Telegraph, expanded its vestibule schools into the mammoth, company-wide Human Resources Department, with an annual budget in the billions of dollars and facilities that ranged from individual classrooms in local telephone company offices to a university-style campus in Lisle, Illinois.

After World War II, General Motors Corporation carried the corporation school concept a step further by building the degree-granting General Motors Institute in Flint, Michigan. The institute enrolled more than 2,500 students in its five-year programs leading to bachelor of science degrees in engineering, with specialties in manufacturing, mechanical engineering, industrial engineering and electronic engineering. Students alternate 12 weeks on campus and 12 weeks on the job; about a quarter of the students are women. Although most courses are in science and engineering, the institute requires 18 credit hours of humanities and a number of communications courses that teach students to write reports and present them orally. Later called the GM Engineering and Management Institute and now Kettering University, the school became independent of General Motors Corporation in 1982, and because it now draws students from many other companies besides GM, it charges annual tuition of nearly \$15,000. Room and board are extra, but earnings during the 12-week working periods usually provide enough to cover costs for the 12 weeks spent on campus. The original GM Institute served as a model for other major corporations, which began establishing degree-granting technical

colleges in the mid-1990s to feed their executive and technical ranks with men and women trained to meet the specific needs of each sponsoring company. Although such institutes offer the same broad technical education available at many conventional universities, they also offer specialized courses related to each company's products or services—semiconductors, for example, or computer software or hardware.

Corporation for National and Community Service A federal agency created by the National Service Trust Act of 1993 as an umbrella organization for related public service organizations then scattered throughout various unrelated government departments. The programs included the Service Learning programs of the Defense Department, VISTA (Volunteers in Service to America), Youth Challenge program, the National Student Volunteer Program, University Year for ACTION, the Literacy Corps, the Student Community Service program and AMERICORPS.

Corporation for Public Broadcasting A publicly supported radio-television network created by the Public Broadcasting Act of 1967 to provide the public with educational and culturally enriching radio and television programs. Funded by a combination of federal government appropriations and voluntary gifts from corporations and private citizens, the corporation provides a wide range of commercial-free educational offerings. In addition to informal educational programs for preschool, elementary and high school students, it pioneered electronic delivery of formal courses—now called DISTANCE LEARNING—with which viewers could earn high school and college credits at home. Subsequently, its Adult Learning Satellite Service began delivering more than 70 courses to about 2,000 colleges to incorporate in their

curricula. The CHILDREN'S TELEVISION WORKSHOP (now Sesame Workshop) created three of the most important and influential educational programs ever aired for children: *SESAME STREET*, *The Electric Company* and *Feeling Good*. Financed by the CARNEGIE CORPORATION OF NEW YORK, the FORD FOUNDATION and the federal government, these programs were the first to incorporate the school curriculum into entertainment broadcasting. They succeeded in luring millions of children away from commercial television programs, which were targets of criticism for enveloping young viewers with violence and erotica.

Sesame Street was designed to appeal to socially deprived preschoolers without preschool education and, therefore, with limited development of school-related skills. Although middle- and upper-income children also became part of the core audience for *Sesame Street*, the program reached 90% of inner-city children and, according to schools in those neighborhoods, produced remarkable results in improving reading readiness of deprived children. The workshop also produced *The Electric Company* to teach and improve reading techniques of slightly older children and it brought health education to teenagers through its program *Feeling Good*.

For adults, the Corporation for Public Broadcasting sponsors public affairs programs, live theater presentations, classic films, concerts, dance recitals, opera, culinary demonstrations, historical documentaries and science documentaries.

corrected test method A common method of teaching spelling by asking students to spell words they have not studied before and giving them a master list with which to correct their own tests. Students must then rewrite all misspelled words correctly.

correlation, subject The simultaneous teaching of two or more interrelated areas of different

subjects, such as the history of ancient Egypt and the history of art and languages, or Elizabethan English and Elizabethan history, or algebra and science. Subject correlation is designed to show students the broad framework within which each element of their studies fits. Subject correlation is a major goal of TEAM TEACHING, whereby all the teachers of a particular grade of students coordinate the curriculum and weekly lesson plans so that materials studied in every subject relate to materials in other subjects. Thus, a study of ancient Egyptian history would correlate with language arts studies of hieroglyphics and the origins of written language. Egyptian history would also tie into the study of plane and solid geometry in mathematics, the study of mechanical advantage in physics and the study of perspective in art.

correspondence course The independent study of a specific topic, subject or vocation by mail, outside a formal school setting, with all course materials—texts, lectures and so on—sent to the student by mail, and all student submissions—essays and examinations and so on—returned to the instructor by mail. Although rendered obsolete by electronically transmitted DISTANCE LEARNING programs, correspondence courses were available from both private and proprietary correspondence schools and accredited colleges and universities. Many correspondence courses offered high school and college credits and were as valid as on-campus courses as credentials in the workplace or admission to graduate school. The quality and value of correspondence courses varied according to the specific course and the school that offered it. Correspondence courses were of particular value to students living in isolated areas far from any school with the particular courses they needed. Such courses were also of value to students whose jobs did not permit attending classes during conventional school hours.

Correspondence courses in the United States originated with the CHAUTAUQUA LITERARY AND SCIENTIFIC CIRCLE, organized in 1878 as a "school at home, a school after school, a 'college' for one's own house." The circle's Chautauqua Press provided the necessary books and study materials to hundreds of thousands of subscribers, and the circle awarded "diplomas" to its tens of thousands of graduates. WILLIAM RAINEY HARPER, who directed a summer program at Chautauqua and would later become president of the University of Chicago, developed a special college-level correspondence course for those seeking bachelor's degrees.

correspondence school Any organization that provides CORRESPONDENCE COURSES. Now largely replaced by Internet-based DISTANCE LEARNING schools, the vast majority of correspondence schools were private, profit-making proprietary schools, although a few renowned institutions such as the University of Oklahoma and California State University offered complete curricula by mail, leading to bachelor's and master's degrees. At their peak, just before the development of electronically delivered distance learning courses, American correspondence schools numbered more than 1,000, serving an estimated 5 million Americans.

cottage system A boarding-school housing arrangement in which students live in relatively small, family-like groups, in separate homes or cottages, with a married couple serving as surrogate parents. In use at some exclusive, private boarding schools, the cottage system is an alternative to the less personal, dormitory-style of living. It has also proved effective in many custodial institutions for juvenile offenders.

(See also BOYS TOWN.)

Council for Basic Education A nationwide association of academic and civic lead-

ers, founded in 1956 to promote the "BACK-TO-BASICS" movement in public school education. The organization's goal is to strengthen teaching of such basic academic disciplines as English (reading, writing, speech and literature), foreign languages, history (including geography and civics), mathematics, science and the arts. The council publishes a monthly bulletin, *Basic Education*, and many books and reports.

Council for Higher Education Accreditation A private agency that accredits institutional and other education ACCREDITATION ASSOCIATIONS.

(See also ACCREDITATION.)

Counts, George S. (1889–1974) A disciple of JOHN DEWEY and author of *Dare the School Build a New Social Order?*, a controversial pamphlet, published in 1932, urging American teachers to change the American social system through student indoctrination. Counts's philosophy was a logical outgrowth of Dewey's: schools must be laboratories for teaching democracy. Counts, however, went a step further by pointing out that the failures of American capitalism had produced the economic depression of the 1930s and were threatening the foundations of democracy. A professor at Teachers College, Columbia University, from 1927 to 1956, Counts called on American teachers to form a militant organization to indoctrinate American students to rebuild the American economy and redistribute American wealth more equitably. He was president of the AMERICAN FEDERATION OF TEACHERS from 1939 to 1942.

Although Counts stirred up considerable debate, the vast majority of American teachers rejected his call for action. A study of teachers at the time found that more than half believed that lack of effort, rather than economic deprivation, was the primary reason economically

poor children performed worse in school than wealthier students. Moreover, more than 80% believed their primary obligation was to indoctrinate their students with a strong faith in the U.S. Constitution rather than work for any changes in the American system. Counts's importance to American education remains a matter of debate.

course catalog A booklet available in print or on-line and published by each high school and college listing every course offered, along with a brief description of the scope of each course, the place and times each course meets, the name of the instructor, the prerequisites for enrollment and the number of credits awarded for successful completion.

(See also CATALOGS, SCHOOL AND COLLEGE.)

course credit A unit of value awarded for the successful completion of a course. At the secondary school level, credits are usually awarded on the basis of CARNEGIE UNITS, with each state determining the specific number required for graduation. Colleges generally award credits on the basis of credit hours, or the number of classroom hours a course meets each week. College course credits, however, vary widely from the basic formula. A seminar meeting twice weekly for two hours at a time may be a three-credit course, and a science course with three one-hour lectures a week and a three-hour laboratory session may be only a four-credit course. On the other hand, a seminar that meets only once a week for two hours might be a three-credit course if it demands a thesis, and an independent studies course with no regularly scheduled class meetings might also be a three-credit course. Regardless of the number of credits granted for each course, each high school and college has a required number of total credits that a student must take each year for promotion to the next grade level and eventual graduation.

course management software Software for disseminating course materials, correcting test papers, evaluating student work and tabulating and recording grades. Course management software also permits two-way communication, allowing students to do course work on-line for either on-campus classes or DISTANCE LEARNING programs. Many colleges are expanding distance learning activities by buying on-line courses from course management firms rather than investing in the costs of developing their own materials—often \$10,000 to \$60,000 for as many as 300 hours of work. Course management firms offer the finished products at prices as low as \$1,000 for a two-credit course and \$1,500 for a three-credit course. Colleges and professors can customize the offerings before enrolling students. Carnegie Mellon University established a for-profit subsidiary called iCarnegie that sells on-line courses to other colleges for their distance learning programs, and the nonprofit Monterey Institute for Technology and Education in California has established a National Repository of Online Courses. A number of community colleges are setting up informal networks to buy and sell courses from one another.

Cramp v. Board of Public Instruction of Orange County, Florida A 1961 U.S. Supreme Court decision that declared a Florida loyalty oath unconstitutional. Florida had been requiring teachers and other state and local government workers to sign, as a condition of employment, an oath not to “lend my aid, support, advice, counsel or influence to the Communist Party.” Filed by Orlando public school teacher Donald W. Cramp, Jr., the suit produced a unanimous Court decision that called the oath vague and an “absurdity.”

creation science A pseudoscientific course basing all biology, zoology, geology and paleontology on scriptural precepts and the teachings

of fundamentalist Protestant churches. Creation science rejects Charles Darwin's theory of evolution in favor of the biblical notion in Genesis that God created the Earth and all its creatures, including man, in six days. Declared an unconstitutional intrusion of the church into state affairs, creation science has been outlawed in public schools by a succession of U.S. Supreme Court decisions. In *EDWARDS V. AGUILLARD* in 1987, for example, the Court declared creation science an attempt to discourage the teaching of accepted scientific theories while promoting a specific religious belief. Undeterred by the court rulings, Christian fundamentalists repackaged creationism into a new religious concept called INTELLIGENT DESIGN and again placed the teaching of evolution in jeopardy in many areas. A theory that an as-yet-unidentified guiding force directed the development of all living organisms, including humans, intelligent design asserts that living organisms are too complex to have evolved from common ancestors through natural selection and random mutation. Underlying the argument for intelligent design is the concept of "irreducible complexity," which holds that the interdependent parts of most organisms make it impossible for them to have existed in any other earlier, more primitive form. Unlike creation science, the theory of intelligent design carefully avoids all references to religious beliefs that the United States Supreme Court barred from the public school curriculum. Nonetheless, a Federal District Court in Harrisburg, Pennsylvania, ruled in December 2005 that intelligent design was as much a religious viewpoint as creationism and that public schools injecting it into the science curriculum were in violation of the First Amendment of the Constitution.

creative dramatics A pedagogical technique used especially among preschoolers and kindergartners to encourage creativity, verbal skills and public presence by asking them to act out

original stories and ideas spontaneously. In effect, creative dramatics is an exercise in "make-believe," such as "playing house," in which students make up their own dialogue and actions instead of adhering to a predetermined script.

credential In education, a document issued to an individual by an accepted authority permitting the individual to perform appropriate teaching or nonteaching services. A credential may be a license issued by a governmental agency, a professional certificate granted by an appropriate professional organization or a diploma or degree granted by an appropriate educational institution.

Cremin, Lawrence A. (1925–1990) American educator, historian and president of Teachers College, Columbia University, from 1974 to 1984. One of the leading historians in the field of American education, Cremin won the 1981 Pulitzer Prize in history for his massive, three-volume history entitled *American Education*, published, respectively, in 1970, 1979 and 1987. Volume I was entitled *The Colonial Experience, 1607–1783*; volume II, *The National Experience, 1783–1876*; and volume III, *The Metropolitan Experience, 1876–1980*. The most comprehensive history of American education ever written, Cremin's work was based on his own broad definition of the concept of education, which he called "the deliberate, systematic, and sustained effort to transmit, evoke or acquire knowledge, values, attitudes, skills and sensibilities, as well as any learning that results from that effort, direct or indirect, intended or unintended."

Among his 16 other important works were *The American Common School* (1951); *The Republic and the School: Horace Mann on the Education of Free Men* (1957); *The Transformation of the School* (1961); *The Genius of American Education* (1965); *Public Education* (1976); and

Traditions of American Education (1977). Born in New York City, Cremin attended Townsend Harris High School and City College of New York and earned his Ph.D. at Columbia. He taught at Harvard and Stanford Universities before coming to Teachers College.

crime on campus The number of felonies and arrests on American college campuses, as reported to the U.S. DEPARTMENT OF EDUCATION under the terms of the CLERY CAMPUS SECURITY ACT. In 2003, the 6,412 campuses reporting acknowledged 7 murders, 10 cases of negligent manslaughter, 2,379 forcible sex offenses, 55 nonforcible sex offenses, 1,420 robberies, 2,218 aggravated assaults, 23,260 burglaries, 6,426 motor-vehicle thefts, 1,046 cases of arson and 71 hate crimes. American colleges reported 30,677 arrests for liquor-law violations, 12,456 arrests for drug-law violations and 1,116 arrests for weapons-law violations. Clery Act reports give no indication of which crimes are committed by college students and which by campus intruders. Of the more than 35,500 crimes reported on American college campuses, nearly 75% occurred at public two-and four-year colleges. Colleges are not, however, required to report the outcomes of on-campus, college-sponsored investigations of each crime, and there is no way of knowing how many reports of crimes were dismissed outright or how many crimes reported as lesser violations were, in fact, more serious. Not included in the tabulation of crimes is high-tech electronic cheating, or e-cheating, which is, at least technically, a crime falling under a wide variety of categories—all of them difficult to pursue in court.

(See also SCHOOL SECURITY.)

criterion-referenced test An examination that measures and compares a student's knowledge to teacher and school goals and expectations for the particular class and grade. The best known criterion-referenced tests are compe-

tency tests that measure each student's basic level of skills in each subject. Criterion-referenced tests are one of three broad types of tests. The others are the NORM-REFERENCED TEST, which compares the student's knowledge to the average knowledge of other children, and the CHILD-REFERENCED TEST, which compares a child's knowledge after instruction with what he knew before. Each of the three has its advantages and disadvantages, depending on the motivation of the schools and individual teachers. Scores of criterion-referenced tests can be artificially elevated, for example, by "teaching the test" and devoting class time to preparing students for possible questions they may face on such tests.

critical thinking The intellectual evaluation of a variety of assumptions and empirical data and the ability to arrive at logical conclusions on the basis of that evaluation. Critical, or high-level, thinking is an essential part of the curriculum from kindergarten through high school and college. It is usually taught by teacher questions that call for lengthy, subjective, oral and written responses. The goal is not only to elicit correct answers to questions but to teach children the reasoning process that leads to correct answers.

A major criticism of American public school education has been its failure to teach high-order, critical thinking. In a scathing report, the U.S. Department of Education found that "students at all grade levels are deficient in higher order thinking skills." The department blamed overuse of short-answer, multiple-choice tests for part of the problem.

Like knowledge, memory and comprehension, critical thinking abilities increase with development, maturity and training. The teaching of critical thinking begins in kindergarten with prereading and postreading discussions to analyze character traits and map a possible future course of events for those characters after the story ends. As they progress, kindergarten

and early elementary school teachers encourage children to make up their own stories from a picture and summarize in a few sentences a story they have heard or read. Inviting students to retell stories in their own words, whether orally or in writing, and to pinpoint causes and effects are basic methods of teaching critical thinking. By fourth grade, students with standard comprehension and critical thinking skills should be able to distinguish between the main and subordinate ideas in a reading, to select the climactic statement or event and to describe the feelings and emotions of the characters. They should also be able to solve mathematical story problems.

Secondary school comprehension skills include the ability to describe the main idea of a reading; the unstated ideas, places or settings; and the reasons for character actions. At MODEL SCHOOLS that teach critical thinking skills, science students are able to describe the atomic, molecular, cellular, tissue, systematic and organic differences between any two organisms, and history students can detail in essay form the differences between the English parliamentary system and the U.S. system of government. In mathematics, a typical seventh-grade test question at schools that teach critical thinking might ask students to measure a U-shaped figure and calculate its area, while writing out the reasoning for each step in their calculations.

cross-disciplinary studies The formal or informal integration of materials from one or more courses into a single, new course. American studies, for example, may, depending on the particular college, integrate into a single course of study the literature, history, sociology and political structure of the United States. At the elementary and high school levels, cross-disciplinary studies, or SUBJECT CORRELATION is a primary goal of TEAM TEACHING. Team teaching coordinates the curriculum and weekly lesson plans in each grade so that the materials studied

in every subject relate to the materials in every other subject. Thus, a study of ancient Egypt in history would correlate with a study of hieroglyphics, the study of the origins of language in language arts, the study of plane and solid geometry in mathematics, the study of mechanical advantage in physics and the study of perspective in art.

cross-registration The enrollment in a course, for full academic credit, at an institution of higher education by a student attending a second, unaffiliated institution. Cross-registration agreements have proved to be profitable for colleges and universities by avoiding and eliminating duplication of a wide variety of courses, without depriving students of access to a broad spectrum of academic offerings.

Crystal Palace Exhibition The first American industrial exhibition designed to display to Americans at all levels the world's technical and scientific advances. An imitation of a similar exhibit that had been held two years earlier in London, England, the American Crystal Palace Exhibition was held in 1853 at 42nd Street and Fifth Avenue in New York City, the current site of the New York Public Library. It brought together 5,000 exhibits, ranging from surgical instruments to military ordnance, from 23 countries. About 1.235 million visitors came to the exhibition and carried its "lessons," in the form of promotional literature, to all parts of the United States. For the era, with its paucity of secondary school and higher education, industrial exhibits such as the Crystal Palace Exhibition served as valuable educative institutions for the general public. "They increase as well as diffuse knowledge," explained William P. Blake, in his book *Great International Expositions* (1872). "By bringing together and comparing the results of human efforts, new germs of thought are planted, new ideas are awakened, and new inventions are born."

Cuisenaire Number-in-Color Plan A multisensory system of teaching basic number concepts that revolutionized mathematics instruction in kindergartens and elementary schools around the world. Introduced in 1952, by Belgian schoolteacher Georges Cuisenaire (1891–1976), the system uses sets of small, colored, one-centimeter-diameter dowels, or “rods,” to facilitate children’s understanding of mathematical concepts. Cuisenaire had studied both music and education as a young man and trained as a composer before becoming a teacher and, eventually, an elementary school principal. Convinced that children could enjoy learning mathematics as much as they enjoyed learning music with him, he first recognized that note recognition by young children was facilitated by their different shapes and by the hollowing out of whole notes and blacking in notes of smaller mathematical values. He decided to apply a similar principle to numbers, using dowels of different, but related, lengths, and assigning each a different color. In effect, he turned the learning of mathematics into play and, as a result, not only simplified it, but made it fun. He never patented or profited from his invention, although it is produced by a company that bears his name but has no relationship to him or his family.

The colors serve two purposes: psychological and mathematical. Bright colors appeal to children and invite them to play, build and manipulate, uninhibitedly. At the same time, they unconsciously and invariably discover mathematical relationships. Now a basic teaching tool in every elementary school of minimal quality in the United States and every other advanced country, Cuisenaire Rods, as the Number-In-Color Plan is usually called, come in 10 different lengths, in increments of one centimeter each, from 1 to 10 centimeters and colored, in order of length, white, red, light green, purple, yellow, dark green, black, brown, blue and orange. The coloring is not haphaz-

ard. The basic unit rod is white, for example, while the 7-cm. rod, which belongs to no number “family,” is black. The 2-, 4- and 8-cm. rods are, respectively, the “hot colors,” red, purple and brown, while 3, 6, and 9 are “cool,” light green, dark green and blue. By attaching and detaching the rods to one another, children are actively engaged in “doing” and quickly “see” and “feel” the meanings of basic mathematical concepts such as “more than,” “less than,” “same as/equals” and rapidly move ahead to counting and simple mathematics involving addition and subtraction and fractions. Use of the rods creates lasting, clearly defined visual, muscular and tactile images for each number and its relationship to other numbers. Each number acquires and retains its individuality, and each number and combination of numbers is the result of each child’s own thought, own manipulations and own senses.

cultural literacy A body of knowledge that is common and essential to the functioning of a people related by language, geography and social customs. A term first used by educator E. D. Hirsch, Jr., in his book of the same name, cultural literacy has been defined variously as the knowledge each person needs both to communicate easily with others and to function independently in his society. Critics such as Hirsch and educator ERNEST L. BOYER claim that American public schools are failing to make their students culturally literate. The basis of cultural literacy, say these critics, lies in reading, writing, speaking, listening and computation skills, acquired through a core of common learning from courses in literature, the arts, foreign languages, history, civics, science, mathematics, technology and health.

Literature, wrote Boyer, provides a “perspective on historical events, telling us what matters and what has mattered to people in the past. Literature transmits from generation to generation enduring spiritual and ethical

values." The arts—music, dance and the visual arts—"transmit the heritage of a people. . . . It is no accident that dictators, who seek to control the minds and hearts of men, suppress not just the written and spoken word, but music, dance and the visual arts as well."

culture deprivation A lack of social, cultural and educational training necessary to participate successfully in society at large. In the United States, culture deprivation is associated with poverty, family break-up, poor health and hygiene, lack of English language skills, substandard housing and life in neighborhoods with high rates of crime, drug and alcohol abuse and other antisocial behavior. Since 1964, the federal government has sponsored a wide variety of COMPENSATORY EDUCATION programs aimed at easing cultural deprivation in the United States.

(See also ECONOMIC OPPORTUNITY ACT OF 1964; HEAD START.)

culture-fair (culture-free) test An examination whose questions are not based on cultural experiences and can, therefore, be answered with equal facility by students of different cultures with the same intelligence. Many nonverbal performance tests requiring no language skills often serve as useful culture-fair tests for measuring manual dexterity and reasoning skills. Culture-fair tests date back to the beginning of World War II, when universal conscription drew into the armed forces hundreds of thousands of illiterate men of otherwise normal or superior intelligence. The need for able-bodied soldiers made rejection on the basis of illiteracy impractical. The Army therefore developed two qualification tests to measure intelligence: the Army Examination Alpha, for literate conscriptees, and the Army Examination Beta, for illiterate and foreign-language-speaking soldiers. In administering the Beta test, examiners and test-takers used gestures, pantomime and demonstrations or drew marks and lines instead of

using language or trying to write words. Culture-fair testing became essential in many American public schools after World War II, when large numbers of Hispanic students of normal and superior intelligence were unable to cope with culturally biased intelligence tests designed for English-speaking American children.

cumulation principle A principle of teaching whereby the simplest materials are presented first, followed by materials of ever increasing complexity, but all based on an understanding of earlier materials. The student thus applies knowledge accumulated in each lesson to the learning of each subsequent lesson. The principle of cumulation is especially effective in teaching arithmetic and foreign languages.

cumulative student record A file containing chronological entries of all data pertaining to a student's progress throughout his or her years in an individual school. In addition to biographical and family data, the cumulative record contains all data on student health, standardized test results, attendance record, academic records, extracurricular activities, teacher comments and any other pertinent information.

current events education An element of the social studies curriculum designed to encourage student interest in local, national and world affairs and their relation to history. Taught at every grade level of social studies, current events relies on student reading of monthly, weekly and daily periodicals. Current events helps students develop reading skills, skills in map reading and skills in the use of periodicals and other reference materials. Current events can be an important pedagogical tool in teaching critical thinking by helping students trace the origins of many current events to a long, complex, interconnected series of historic events.

curriculum A broad term usually referring to the totality of formal courses taught in a school or college. It can, however, have broader or narrower meanings. In a broader sense, it can refer to the total school or college program, including on- or off-campus COCURRICULAR ACTIVITIES, as well as academic offerings. In a narrower sense, curriculum can refer to the formal course offerings within a particular department or subject area, as in the mathematics curriculum or English curriculum.

Curricula at the elementary and secondary school levels are established by the individual states, which may or may not give local school-districts freedom to add courses or otherwise deviate from the state program. At the college level, faculty and administration (which includes state officials in the case of public institutions) generally collaborate in determining the curriculum. The administration (and the state, in the case of public institutions) generally determines the institution's broad academic policies and, therefore, the basic academic requirements for graduation and core curriculum. Beyond that, faculty members generally propose and design courses, which the administration must then approve.

curriculum, "cafeteria style" A term referring to "open" high school curricula offering students a wide choice of electives. The latter may range from core academic subjects such as English, mathematics, science and history, to personal improvement courses on hygiene and grooming, with almost all earning credits toward graduation. Cafeteria-style curricula emerged in the late 1950s, when high-school drop-out rates began climbing above 20%, and school administrators sought ways to retain more students by providing courses more attuned to student interests. The result in many schools was the development of the so-called general studies curriculum, with superficial

courses in standard academic courses and a plethora of personal improvement courses in grooming, interpersonal relations, consumer affairs and home economics.

(See also GENERAL EDUCATION.)

curriculum, college In the United States, an amorphous and continually changing program of postsecondary studies in a virtually limitless range of subjects and topics. The scope of American college curricula depends largely on the philosophy and educational goals of individual colleges. In general, colleges offer curricula of between 1,000 and 3,000 courses, only a few of which are specifically required for graduation or a degree. Graduation requirements usually consist of a specific number of course credits, with a specific number reserved for courses in the student's major.

Originally rigid and designed to prepare young men for the Protestant ministry, American college curricula have evolved into programs that, in general, reflect the demands of the marketplace. With many colleges operating at multimillion-dollar annual deficits and some charging students more than \$45,000 a year, few institutions can afford to ignore the demands of their "clients." The result, on some campuses, has been curricula ranging from esoterica to the most complex advanced studies of major scientific, social, economic and political issues. One report on college curricula called many "little more than secondary school material—warmed over and reoffered at much higher expense." Like course quality, graduation and degree requirements vary widely from institution to institution.

Exactly what colleges should teach and what they should require students to study remain major controversies in higher education, as they have been since the first American college, Harvard, opened its doors in 1636. Founded as a divinity school, Harvard required

all students to study logic, rhetoric, ethics, politics, history, arithmetic, geometry, astronomy, physics, the nature of plants, Greek grammar and literature, Hebrew grammar and Bible readings, Chaldee (Chaldean) grammar and Apocryphal readings, Syriac grammar and New Testament readings, and catechetical divinity. Fluency in Latin was a prerequisite for admission. Based on the Oxford and Cambridge models, Harvard's "classical curriculum" had emerged from the clerical and ministerial colleges of the Middle Ages and was designed to supply the colonies with a force of Puritan ministers to oversee the spiritual and secular lives of settlers.

By the end of the 17th century, the rigid Harvard curriculum had become a source of controversy. Although half its students were indeed training for the ministry, others planned to enter law, medicine, industry and public service, and they sought a broader, more liberal education that included literature, history and philosophy. Intellectual liberals responded by expanding the curriculum to include areligious, political and philosophical works of such Age of Reason thinkers as Locke and Rousseau. Angry conservatives quit Harvard and went to New Haven to found Yale and perpetuate the orthodox ministerial curriculum. By the end of the 18th century, however, the term classical education had gained a far broader meaning, and even at Yale it embraced the study of literature, poetry, drama, rhetoric, logic, philosophy, history, art, music and modern foreign languages needed for international commerce.

Meanwhile, another force had developed in college-level curriculum development, based on the practical needs of the American wilderness and the industrial revolution. Secularists led by Benjamin Franklin envisioned colleges as institutions to prepare young men and women for the task of building a new nation.

Franklin founded the secular COLLEGE OF PHILADELPHIA in the belief that practical skills were more important to the survival of the United States than religious instruction. The debate between the Franklinesque "practicalists" and Harvardian "classicists" has persisted in American higher education ever since. The practicalists gained the upper hand in public education policy after the Civil War, when the need to rebuild the nation's agricultural and industrial plant took precedence. In 1862, Congress passed the Land Grant (Morrill) Act, which offered tens of thousands of acres of free government land to each state to sell and use the proceeds to establish and maintain colleges. The new "LAND-GRANT" COLLEGES were to offer practical education in agriculture, mechanics, mining and military tactics, as well as the traditional arts and sciences. The result was the construction across the United States of the colleges that spawned the nation's public state universities and colleges. For the next century, public university curricula leaned toward the practical, while private universities required students to pursue classical studies; many of the latter required three years of high school Latin as an entrance requirement until shortly after World War II. Moreover, the most selective private colleges of the Northeast required all candidates for bachelor's degrees to complete a core curriculum based on classical studies (over and above the required number of courses in their major) to graduate. Usually, the core curriculum included at least two years each of college English and a modern foreign language and one year each of college mathematics and a laboratory science.

The technological and social changes that followed World War II, however, forced private universities to promulgate vast revisions in their curricula—almost all of them market-driven. The most remunerative job opportunities required technical and scientific skills, not

a knowledge of Latin, and students sought out institutions that would provide those skills. Meanwhile, the federal government and major corporations were offering huge grants to those researchers and institutions that provided the best scientific research. Colleges that failed to expand their science curricula not only risked losing such grants, they also faced the loss of their most brilliant teachers and students. With men circling and landing on the moon, Latin and Greek seemed irrelevant. By 2004, the number of bachelor's degrees in business awarded by American colleges and universities had doubled, to more than 21% of all the bachelor's degrees awarded in the United States. In contrast, the number of degrees awarded in English language and literature fell more than 20%, accounting for a mere 4% of all bachelor's degrees awarded. Interest in foreign languages and literature fell even more sharply, and accounted for only just over 1% of the bachelor's degrees conferred in 2004.

Complicating the debate over classical versus practical studies, however, was a new debate over the cultural orientation of college curricula. The post-World War II era had produced social, as well as technological changes. Passage of two sweeping civil rights laws in 1957 and 1964 ended all forms of segregation in education and brought blacks, Hispanics, Asians and women to formerly all-white, all-male campuses. The new arrivals protested what they perceived as a Western bias to traditional literature, history, social science and other course offerings. They demanded a multicultural curriculum that would expose them to non-Western as well as Western history and thought. Women, in turn, demanded a less male-oriented curriculum. Facing deficits that left them financially dependent on students, most colleges acceded to most of the various demands of the mar-

ketplace. It is an unusual institution that does not now offer courses in African-American studies, for example, or women's studies. Ironically, despite the emphasis on multiculturalism, fewer than 8% of American colleges still require any foreign language study. (See MULTICULTURAL EDUCATION.)

Unfortunately, the broadening and diversification of curricula left many colleges without a common educational focus. A 1989 report by the National Endowment for the Humanities (see NATIONAL FOUNDATION ON THE ARTS AND HUMANITIES) found that the majority of American college students were graduating without knowledge of "basic landmarks of history and thought." Among the multitude of evidence were findings that 25% of college seniors surveyed did not know that Columbus landed in the Western Hemisphere before 1500 and that the vast majority could not identify the Magna Carta. A National Adult Literacy Survey by the U.S. Department of Education found large numbers of college graduates lacking basic reading, writing and computation skills.

The result was a return by more than 80% of American colleges to a required CORE CURRICULUM consisting of a minimum number of courses in one or more broad study areas, such as philosophy, science, literature, foreign languages and history. The number and range of such core curricula varied from institution to institution, however. Only about 12% of American institutions of higher education maintained any mathematics requirements for graduation, and only 34% had any natural science requirements. Only about one-third of American colleges now require English majors to read any of the works by Chaucer, Shakespeare and Milton, the three writers generally regarded as preeminent English authors and, until recently, required reading for all English majors. Two-thirds of American colleges that require English literature courses now base their

offerings on so-called pop culture, with course titles such as “The Gangster Film” or “Melodrama and Soap Opera.” Almost all colleges, however, continue to require students to demonstrate proficiency in writing as a prerequisite for graduation.

In 2004, a committee of HARVARD UNIVERSITY administrators, professors and students proposed a restructuring of college curricula to influence course offerings at other academically demanding American colleges. Harvard proposed, on the one hand, a sharp increase in the number of required science courses and, on the other hand, a broader-based approach to the study of major subjects. In the science sector, Harvard suggested expanding the scope of survey courses to include in-depth laboratory studies. In the arts, it proposed expanding courses to include required field study—abroad, if appropriate, but outside the confines of the student’s own college. Students majoring in Chinese history, for example, would spend at least one semester at a university in China. Before Harvard announced these curricular changes, YALE UNIVERSITY had urged similar changes in its curricular mix, suggesting that students take as many as 60% of their courses in science and technology by 2010—regardless of their major. Yale also suggested a response to cultural and economic globalization by expanding the number of foreign students at major American universities to as many as one-third of total enrollment.

(See also APPENDIX D, UNDERGRADUATE MAJORS OFFERED AT AMERICAN COLLEGES.)

curriculum, public schools The totality of formal academic courses offered in American public schools. These include a broad range of liberal arts, science, preprofessional, vocational and self-improvement courses. Although it has no jurisdiction over public school education, the U.S. Department of

Education occasionally publishes model curricula for elementary, middle and high schools that reflect the broad academic curriculum offered by most American public schools—namely, English, mathematics, science, history (social studies), modern foreign languages, art, music, physical education and hygiene and health education. The number of years required varies widely from state to state and school district to school district, as does the depth of exploration into each subject. Here, however, is the model of an ideal curriculum suggested by Secretary of Education William Bennett for all public school students in two pamphlets issued by the Department of Education in 1985 and entitled *James Madison Elementary School, A Curriculum for American Students* and *James Madison High School, A Curriculum for American Students*.

EARLY ELEMENTARY SCHOOL YEARS (K-THIRD GRADE)

English

Introduction to reading and writing (phonics, silent and oral reading, basic rules of grammar and spelling, vocabulary, writing and penmanship, elementary composition and library skills).

Social Studies

Introduction to history, geography and civics (significant Americans; explorers; Native Americans; American holidays, customs and symbols; citizenship; and landscape, climate and map work).

Mathematics

Introduction to mathematics (numbers; basic operations; fractions and decimals; rounding; geometric shapes; measurement of length, area and volume; bar graphs; and estimation and elementary statistics).

Science

Introduction to science (plants and animals; the food chain; the solar system; rocks and minerals; weather; magnets; energy and motion; properties of matter; simple experiments).

Foreign Language

Optional.

Fine Arts

Music and visual arts (songs, recordings, musical sounds, instruments, painting, craftmaking and visual effects).

Physical Education/Health

Body control, fitness, sports, games and exercises; sportsmanship; safety; hygiene, nutrition and drug prevention education.

*LATE ELEMENTARY SCHOOL YEARS
(FOURTH–SIXTH GRADES)*

English

Introduction to critical reading (children's literature; independent reading and book reports; more advanced grammar, spelling and vocabulary; composition skills).

Social Studies

Grade 4, U.S. history to Civil War; grade 5, U.S. history since 1865; grade 6, world history to the Middle Ages.

Mathematics

Intermediate arithmetic and geometry (number theory; negative numbers; percentages and exponents; line graphs; the Pythagorean theorem; basic probability).

Science

Grade 4, earth science and related topics; grade 5, life science and related topics; grade 6, physical science and related topics.

Foreign Language

Introduction to foreign language (basic vocabulary, grammar, reading, writing, conversation and cultural materials).

Fine Arts

Music and visual art (great composers, musical styles and forms, elementary music theory, great painters, interpretation of art and creative projects).

Physical Education/Health

Team and individual sports, first aid, drug-prevention education and appropriate sex education.

*MIDDLE SCHOOL
(SEVENTH–EIGHTH GRADES)*

English

Grade 7, survey of elementary grammar and composition; grade 8, survey of elementary literary analysis.

Social Studies

Grade 7, world history from the Middle Ages to 1900; grade 8, world geography and Asian history and civilization.

Mathematics

Two of the following one-year courses: general mathematics, pre-algebra, algebra.

Science

Grade 7, biology; grade 8, chemistry and physics.

Foreign Language

Formal language study; two years strongly recommended.

Fine Arts

One semester each of music appreciation and art appreciation.

Physical Education/Health

Strategy in team sports, gymnastics, aerobics, self-assessment for health, drug-prevention education and appropriate sex education.

**SECONDARY (HIGH) SCHOOL
(NINTH–TWELFTH GRADES)**

English

Grade 9, grammar, composition and literary analysis; grade 10, grammar, composition and English literature; grade 11, composition, literary analysis and English and American literature; grade 12, advanced composition and world literature.

Social Studies

Grade 9, anthropology and ancient history; grade 10, medieval or modern European history; grade 11, American history, American government and the U.S. Constitution; grade 12, elective (medieval or modern history).

Mathematics

Grade 9, algebra I; grade 10, plane and solid geometry; grade 11, algebra II and trigonometry; grade 12, elective (statistics and probability [1 semester], precalculus [1 semester], calculus).

Science

One year required each in any of the following courses: astronomy/geology; biology; chemistry and physics; or principles of technology. The fourth year provides for an elective in lieu of science.

Foreign Language

Three years required in a single language from among those offered by the school. The fourth year provides for an elective in lieu of foreign language.

Physical Education/Health

Two years required participation in physical education; health 9 and health 10 required in

ninth and tenth grades. Free periods in eleventh and twelfth grades may be filled with elective courses.

Fine Arts

One year each required in art history and music history. The student may take elective courses in the other two years.

curriculum audit A formal, week-long examination and evaluation of a school's curriculum and teaching methods by a team of examiners from the American Association of School Administrators, to see if the school curriculum meets national standards. Designed to expose the strengths as well as faults of a school's faculty and curriculum, an AASA audit is entirely voluntary and not required for ACCREDITATION.

curriculum coordinator A district or school official charged with development, improvement and supervision of curricula in schools and departments within his or her jurisdiction. The curriculum coordinator may have a variety of alternative titles, such as curriculum director or supervisor; or assistant superintendent or principal for instruction or curricular affairs. Regardless of the formal title, the curriculum coordinator is charged with both closely monitoring the curriculum to see its effects on student performance and working with faculty and school administrators to develop more effective curricular offerings. In addition, the curriculum coordinator must spend time in the field studying curricula in other districts and schools. The coordinator must also examine new curricular offerings from publishers and providers of educational materials to see if they might improve student performance in his or her own district.

curriculum development The design of an educational program that fulfills the edu-

cational goals of the institution. Involved are the selection of academic courses; determination of course content; selection of teaching materials and methods; and establishing levels of expectation for student achievement. In addition to course design, curriculum development also involves designing ancillary activities essential to fulfilling the school's broad educational goals. These may include cultural enrichment programs, special educa-

tion and such extracurricular activities as athletics, performing arts, publishing, hobbies, etc. In 1962, Professor Hilda Taba (1902–1967) published the classic work on the subject.

custodian A school staff member charged with janitorial responsibilities such as cleaning and maintaining the school plant and equipment.

D

Dabney, Charles William (1855–1945)

Southern educator, author and a founder-leader of the Southern Education Board, which helped establish free public school education in the South at the turn of the 20th century. Born in Virginia, Dabney was a chemistry professor whose work in agriculture led to the founding of North Carolina State University as a land grant institution and to his appointment as assistant secretary of agriculture. He served as president of the University of Tennessee, Knoxville, from 1887 to 1904 and was instrumental in expanding that institution into a major university and in obtaining passage of the High School Act, which established public school education in Tennessee in 1908. From 1904 to 1920, Dabney served as president of the University of Cincinnati, which he helped build into a leading municipal institution.

In 1901, he helped organize the Southern Education Board, which sent agents throughout the South to promote free public school education for white children as a means of revitalizing the southern economy. Backed by a consortium of northern foundations, the board propagandized and cajoled local and state leaders, gradually winning their support, despite fierce opposition from industrialists and farmers, who relied on children for cheap labor. A prolific author, Dabney's two-volume work *Universal Education in the South* (1936)

describes the 30-year struggle of the board to which he was so intimately tied. Dabney and the board made no effort, however, to improve education for blacks.

Dalcroze method A widely used system of teaching music developed by Swiss composer-educator Emile Jacques-Dalcroze (1865–1950). Believing music to be an active, rather than passive, participatory experience, the Austrian-born Jacques-Dalcroze designed his *méthode* to help children develop an ear for music and feel its rhythm before they begin instrumental training. The system, which influenced modern ballet as well as music pedagogy, consists of three parts: eurhythmics, solfège and improvisation. Eurhythmics teaches children to “feel” the music by moving their bodies in rhythm to it. Solfège teaches sight-reading by disregarding academic nomenclature in favor of the common sol-fa syllables of the musical scale, from which the word solfège is derived. Solfège names the tonic note of every melody do, regardless of whether it is in the key of C, D or any other. The system helps a child learn to sing virtually any melody in relative pitch and develop an ear for music. The third element of the Dalcroze method is improvisation, which teaches children to create their own music.

Dalcroze first described his method in his book *Méthode Jacques-Dalcroze* (1907–14),

which contained various exercises and suggested musical accompaniments for each lesson. He wrote two later books, *Rhythm, Music and Education* (1921) and *Eurhythmics, Art and Education* (1930) and composed more than 1,000 songs, almost all for children to use in their classes. Founder of the Institut Jacques-Dalcroze in Geneva in 1915, he created 39 musical pageants, 85 chamber works, 125 piano pieces and 275 pieces for chorus, 200 with orchestral accompaniment. In the United States, the Dalcroze School of Music in New York City offers a three- to four-year Dalcroze Teachers Training Course leading to the Dalcroze Teachers Certificate and/or the Elementary Certificate.

Dalton Plan A system of individualized instruction in which the student helps design his or her program of study and “signs a contract” pledging to complete the program within a specific time period. Developed in 1920 by Helen Parkhurst at Dalton High School, Dalton, Massachusetts, study contracts are now widely used in intermediate, or middle, schools to help students develop the self-discipline needed for the transition from teacher-directed elementary schoolwork to self-directed high school and college studies. Although the Dalton Plan can take many forms, the basic student contract usually covers the work the student will be required to complete during one month, including daily assignments. The student is expected to keep a careful chart of his or her progress.

dame school A colonial-era elementary school operated for a modest fee by a neighborhood mother in her kitchen. Designed to teach youngsters the basics of reading, writing and calculating, dame schools appeared in communities where children either had no access to formal schools or, for whatever reasons, chose not to attend.

Dana, John Cotton (1856–1929) American librarian and museum director who pioneered curatorial education and spawned the transformation of libraries and museums into public educative institutions. Although the United States boasted thousands of libraries and museums by the end of the 19th century, they remained a center of a national debate over their roles in American cultural life. Conservatives saw them as repositories to preserve the nation’s historical and cultural treasures. They sought to restrict access to researchers, fearing that regular public access would ultimately lead to overhandling of valuable books and their eventual deterioration.

When the Vermont-born Dana became librarian in Denver, Colorado, in 1898, he found a gated fence separating would-be readers from the bookshelves. Behind the gate a librarian with sole access to the institution’s works sat at a desk, waiting for reader requests to find books and bring them to the gate. The reader then filled out often complex forms before being permitted to read the book at a table in full view of the librarian. Moreover, most libraries opened only during normal working hours, when most readers were themselves at work. Dana immediately lengthened library hours in Denver to make the collection accessible to the entire community. He removed the railings and locked glass doors and placed both the circulating and reference collections on open shelves. He put the most rarely used materials in special annexes and filled the shelves of the main library with those materials most in demand by the general public. He broadened the collection to fill the needs of the entire community, adding children’s books, foreign-language materials for immigrants and specialized materials of interest to those involved in local businesses and industries. Conservatives scoffed at Dana’s innovations, predicting that overhandling would destroy the library’s collection and even

lead to the spread of infectious diseases—an issue of considerable importance at the end of the 19th century. Dana vigorously defended himself: “A collection of books gathered at public expense does not justify itself by the simple fact that it is. If a library be not a live educational institution, it were better never established.”

Dana took the same philosophy to Newark, N.J., where he became librarian and museum director. There, he expanded the museum to include flora, fauna, minerals, craft-work, school-work manufactured products and other artifacts indigenous to the surrounding community, and he loaned collections to local schools and other community institutions. He also organized a curatorial apprenticeship program for college graduates who planned to go into museum work. He also brought in many special exhibits and constantly advertised the museum’s programs to encourage public visits. “A museum,” he explained, “is an educational institution, set up and kept in motion that it may help the members of its community to become happier, wiser and more effective. It can help them only if they use it. They can use it only if they know of it.”

When Dana died in 1929, his transformation of Newark’s library and museum into popular educational institutions was only just beginning to have an impact on libraries and museums elsewhere. In the decade that followed, however, almost every library and museum in the United States adopted Dana’s innovations.

dance An art involving bodily movements according to a planned, rhythmic pattern, usually performed to music. A standard part of the college curriculum in precolonial England, dancing was taught with singing “and all games proper for nobles, as those brought up in the king’s household are accustomed to practice.” In the late 18th century, philoso-

pher John Locke’s work *Some Thoughts Concerning Education* listed dancing, along with music, fencing and horsemanship as important complements to formal education in classical subjects.

Dancing did not, however, find its way into the curricula of schools and colleges in the American colonies, where Puritan ministers in charge of 17th-century education frowned upon and often banned amusements. Formal dancing was, however, taught outside school to the children of the landed gentry by private instructors. At the beginning of the 19th century, when gymnastics was introduced into private academies, dancing, too, was taught. Aside from teaching proper manners, dress and behavior with members of the opposite sex, dancing promoted fitness and helped youngsters develop motor skills, coordination of mind and muscles, and respect for rules.

Dancing remained a standard element of the private elementary school curriculum until the late 1950s, when improvisational dancing to rock-and-roll music replaced formal ballroom dancing.

Darrow, Clarence (1857–1938) One of the most successful trial lawyers in American history and the defense attorney in the SCOPES MONKEY TRIAL in Tennessee. Born in Ohio, Darrow chose the Scopes case with the primary intent of making national headlines and thereby educating the American public to his then-liberal, civil libertarian views. In the Scopes trial, he defended a 24-year-old science teacher at Dayton High School against charges he had violated Tennessee’s Butler Law. The 1925 law banned the teaching of “any theory that denies the story of the Divine Creation of man as taught in the Bible, and to teach instead that man has descended from a lower order of animals.” Darrow, who had been successful in more than 50 capital cases, took the Scopes case for “the purpose of preventing bigots and



Clarence Darrow, leaning with back to the table, at the "Scopes monkey trial" in Dayton, Tennessee, July 1925 (*Library of Congress*)

ignoramuses from controlling the education of the United States. . . ." Although he lost the case, and Scopes was fined \$100, Darrow effectively humiliated and discredited the Christian fundamentalist movement that had sponsored the Butler Law, and in particular, prosecuting attorney WILLIAM JENNINGS BRYAN.

Dartmouth College A private, liberal arts college founded in 1754, in Lebanon, Connecticut, as a school for American Indians. Dartmouth received a royal charter to become a college in 1769, at which time it moved to its

present site in Hanover, New Hampshire. The school was founded by ELEAZER WHEELOCK, a Congregationalist minister intent on converting Indians to Christianity. He started his school in his parsonage in Connecticut, where he tutored a handful of Indian youths along with a few white boys dedicated to becoming missionaries. The royal charter and the move to larger quarters in New Hampshire allowed the school to become a college, where few Indians qualified for admission and colonials soon dominated the student body. Dartmouth today has more than 4,000 undergraduates and more than 1,500



The central green at Dartmouth College, Hanover, New Hampshire (Stuart Bratesman, Dartmouth College)

graduate students in its medical school, school of engineering and Amos Tuck School of Business. Its undergraduate college is in session year-round, operating with an unusual academic calendar of four 10-week terms.

Dartmouth College case A still-controversial 1819 U.S. Supreme Court decision that held charters—even those granted by the British king before U.S. independence—to be binding contracts protected by the Constitution. Officially known as *Trustees of Dartmouth College v. Woodward*, the case had its origins in an 1815 conflict between Dartmouth College president JOHN WHEELOCK and his board of trustees over control of college affairs. Wheelock, who graduated from Dartmouth's first

class in 1771 and succeeded his father, Eleazer, as Dartmouth president in 1779, appealed to the legislature. The board responded angrily by dismissing him.

In 1816, a new, Democratic legislature declared the charter issued in 1769 by King George III invalid and replaced it with a new one, naming a new board and reinstating Wheelock. The old board sued and, after it lost its case in a state court, obtained the services of Daniel Webster and appealed to the U.S. Supreme Court. In 1819, the high court ruled that Dartmouth was a "private eleemosynary corporation" and that its charter was a valid contract. It ruled the New Hampshire law reinstating Wheelock a violation of Article 1, Section 10, of the Constitution, forbidding any

state legislation that impairs a contractual obligation. The decision restored the original board to power.

Those who elevate the importance of the case insist that it represented a clear victory of private over public interests and limited the ability of local and state governments to interfere in the operations of private schools and colleges. However, subsequent legislation has so changed the nature of charters that it is questionable whether the *Dartmouth* case has any application in modern society. Moreover, the acceptance of government grants by any college automatically subjects it to a wide variety of government controls that dictate policies over admissions of minority groups, access by the handicapped and a host of other issues.

Davis v. County School Board One of four cases in Kansas, South Carolina, Virginia and Delaware that the U.S. Supreme Court consolidated into the landmark school desegregation decision *BROWN V. BOARD OF EDUCATION OF TOPEKA*.

day care A widely varying program for tending the physical, emotional and intellectual needs of children two to five years old while their parents work. Day-care programs operate as many as six days a week for up to 12 hours a day, in private homes, churches, social service agencies, independent entrepreneurial “nursery schools,” cooperative, parent-owned centers, public and private schools, university campuses and factories and businesses. Because they do not fall under the jurisdiction of state education authorities in most states, operations and conditions vary widely. Some amount to nothing more than baby-sitting services; others offer comprehensive programs that include carefully planned feeding and nutrition programs, organized play and formal instruction to help each child’s physical, emotional, social and intellec-

tual development. Most states require licensing of day care centers; some require staffers to be trained and certified. Of the nearly 100,000 day-care centers in the United States, fewer than 15% are accredited by the National Association for the Education of Young Children. Accreditation, however, is of questionable value, because it is based largely on self-analysis. Only about two-thirds of accredited day-care centers were rated as offering high-quality care by outside researchers, with the rest providing only mediocre care. The quality of nonaccredited day-care centers was even worse, with about 30% of the care offered to infants and 15% of the care offered to children two and a half to five years old rated as harmful. In the most definitive study of the effects of day care, the *ABECEDARIAN PROJECT* in Chapel Hill, North Carolina, found that, regardless of their economic levels, children who received high-quality day care consistently outperformed children who did not, on both cognitive and academic tests. Children who received high-quality day care were also more likely to attend college and hold high-skill jobs in adulthood.

The principle of day care goes back to the 18th century, when some two- and three-year-olds were sent to rural common schools with older siblings while their parents worked in the fields. The practice disappeared in the early 19th century, however, in favor of family care, either by mothers themselves or neighborhood women. Day care as we know it today has its roots in the post-Civil War industrial expansion and the population explosion that took place with the arrival of millions of immigrants. To survive, few families could afford to leave a parent at home to care for young children. Children either stayed with neighbors or relatives, at home with older siblings or roamed the streets. Journalist-author Jacob Riis estimated in 1892 that New York City had a population of 200,000 children under five, of whom half could be found on the streets, unattended. Churches and

charitable organizations responded by establishing the first organized day-care centers—Riis listed 28—but most limited their activities to what Riis called the “soap cure,” that is, physical care, consisting of feeding and bathing the children and keeping them off the streets.

In 1909, the Conference on the Care of Dependent Children opened with President Theodore Roosevelt’s call for direct financial aid—so-called mothers’ pensions—to widows, to allow them to remain at home to care for their children. In 1911, Missouri and Illinois enacted the first legislation providing for such aid, and over the next seven years, 37 of the 48 states followed suit. To receive such pensions, mothers had to provide proof of poverty and be “a proper person, physically, mentally and morally fit to bring up her children.” By 1931, all but Georgia and South Carolina provided mothers’ pensions, and in 1935, the AID TO FAMILIES WITH DEPENDENT CHILDREN portion of the Social Security Act provided federal funds to underwrite state programs.

Although the mothers’ pension movement reduced the need for day care, it also gave rise to its transformation from a physical-care facility to an educative institution—that is, the nursery school. Designed with much wider social, educational and developmental goals, nursery schools not only housed, cared for and fed their charges, they also provided health maintenance services, mental and emotional services, constructive play, lessons in socialization, and such preschool intellectual activities as storytelling, exploring nature, art, music and dance. By 1930, about 300 nursery schools had opened across the United States, and the number increased fivefold after the Federal Emergency Relief Administration (FERA) provided funds to establish nursery schools for needy children. Designed to put unemployed teachers back to work, the FERA program and, later, the Works Progress Administration, sponsored nearly 1,500 nursery schools with an enroll-

ment of nearly 40,000 children. In 1942, the program expanded to allow mothers to take jobs in World War II defense plants. By the end of the war, 2,800 federally financed day-care centers were caring for about 1.5 million children. Although most of them closed after federal aid was withdrawn, the day-care movement had grown so strong that private operators stepped into the breach to provide what by then had become an essential service for American families. In 1964, the U.S. government once again involved itself in day-care as part of its “WAR ON POVERTY.” Asserting that, without equal educational opportunities, the poor would never obtain equal economic opportunities, the government launched a comprehensive program to provide day-care to economically disadvantaged children. Called Operation Head Start, or more simply HEAD START, the program funded establishment of several thousand day-care centers across the United States to provide preschool education to about 750,000 economically deprived children a year. By 1999, nearly 60% of American children under five years of age, from all economic levels, were attending day-care centers, nursery schools or both.

deaf-blind A multihandicapped individual with debilitating auditory and visual impairments requiring special education programs to develop residual hearing and visual skills. There are an estimated 5,000 deaf-blind children in the United States. Although often congenital, deaf-blindness can also be caused by external factors such as rubella.

deafness For young children, a hearing impairment that prevents normal speech development and interferes with normal daily functioning. Deafness may be congenital or adventitious (caused by accidents or illnesses). Children with partial deafness who are classified as hard-of-hearing may, with proper care,

develop normal speech and learn to function normally in every other way.

About 2.2 million of the 17.5 million Americans with hearing impairments are severely deaf, and their education has been the subject of controversy within and without the deaf community for more than two centuries. Until the mid-1500s, the deaf were considered ineducable, and the first schools for deaf children were not established until the 1700s—by Abbé Charles Michel de l'Épée (1712–89) in France and by Samuel Heinicke (1727–90) in Germany. Since then, educators have debated whether deaf children should be educated by l'Épée's manual method, using hand and finger signs, or by Heinicke's oral method, in which they learn lipreading to understand others and learn to speak vocally. The oralists maintain that deafness is a disability that every deaf person should strive to overcome by every means available: surgery, hearing aids, lipreading and learning to speak by sounding out words—regardless of the psychological costs. Supporters of this view, in effect, want to make the deaf hear. The l'Épée "manualists," on the other hand, maintain that deafness is a culture (Deaf culture), which like any culture, has its own language, and that education should center on mastery of that language. Called AMERICAN SIGN LANGUAGE, the language of the deaf in the United States is not a word-for-word translation of the English language, but an independent language with unique syntactical and other grammatical features. If, for example, the signed version of the English language sentence "People mislabel me as disabled" were translated literally into English, it would read: "Disabled, people label me, wrong." There is, of course, a third school of thought that holds with both points of view and sees no conflict in helping the deaf communicate equally well with both the hearing and deaf worlds. Advocates of this broader approach point out that 90% of

severely deaf Americans were born to hearing parents who delayed their children's intellectual development unnecessarily because they lacked skills in raising deaf infants. Educators now urge parents of the deaf to combine all forms of manual and oral methods in communicating with their infants and to enroll their children in specialized all-day parent-child pre-schools by age three at the latest—preferably earlier. Educators themselves now depend on total communication to teach hearing impaired primary and secondary school students. The first school for the deaf was established in the United States by THOMAS H. GALLAUDET, and the college founded in Washington, D.C., in 1856 by his son remains the only liberal arts college for the deaf in the Western world. The National Technical Institute for the Deaf was founded in Rochester, New York, in 1968, to offer technical education.

(See also BELL, ALEXANDER GRAHAM.)

dean's list An honor roll listing the names of students with the highest grade point averages or academic class rankings for a specific marking period, term or academic year.

death education The formal or informal study of death and dying and its effects on survivors. Although an established element in formal, college-level psychology courses, death education as an informal topic has now been integrated into many primary and secondary school health-education programs, beginning as early as kindergarten. Such programs not only explain dying and death as part of the normal life cycle, they encourage students to express their feelings about death—especially the death of loved ones. Death education has gained importance in recent years as schools have expanded their roles in helping children deal with the trauma of natural disasters and the sudden deaths of friends or family by violence or suicide.

debating societies Extracurricular student organizations formed to argue objectively and dispassionately, under strict rules and procedures, the opposite sides of particular issues. Debates usually begin with a moderator's presentation of the issue in the form of a resolution for action—for example, "Resolved, that 16-year-olds be given the right to vote." One or more members of each team, in turn, argue pro or con, and each debater has an opportunity for a rebuttal, all within specific time limits. The moderator eventually polls the audience to determine which team has presented its argument most successfully.

The origins of debating societies go back to 17th-century Oxford and Cambridge universities, where the lecture, the declamation and the disputation formed the heart of the curriculum. HARVARD COLLEGE, America's first institution of higher learning, instituted a similar curriculum as early as 1642. The lecture was a type of oral textbook, which the "master" (teacher) usually presented as a question, followed by a systematic breakdown of the question into its various elements. After dealing separately with each element, he then related each to the other in a way that either supported or undeniably disputed the validity of the original proposition. The goal of declamation and disputation was to teach students to do the same. Harvard devoted one full day of its five-and-a-half-day week during the 17th century to rhetoric, declamations and disputation. Rhetoric taught students graceful speaking skills, and declamations allowed individual students to display their knowledge orally. Disputations pitted groups of students against each other in debate, while the moderator-master supervised the scene and eventually declared a "winner," in a "dismissal speech" that brought an end to the proceedings.

As colleges added foreign language, scientific and engineering courses in the 18th and 19th centuries, rhetoric, declamation and dis-

putation were soon crowded out of the curriculum, and debating, as we know it today, became an extracurricular activity. When intercollegiate athletic competition began in the late 19th century, intellectuals expanded that competition into the academic sphere with intercollegiate debates.

decentralization In education, the ceding of authority over local schools by a central or regional school board to local boards made up of members of the community served by each school.

Decentralization has been a topic of debate in large urban areas, such as New York City, where huge central bureaucracies attempt to control day-to-day operations with a blanket of universal regulations. Far removed from many of the schools they govern, such centralized boards often have little knowledge of the special needs of individual schools and their students. New York City attempted to meet those needs better in 1969, with a decentralization law that created and gave limited power to 31 local school boards. In addition, parents, teachers, foundations and businesses have, since 1991, established more than 1,700 so-called CHARTER SCHOOLS across the United States—publicly funded schools that operate free of all day-to-day controls by centralized district school boards and school board bureaucracies. After nearly 30 years, however, decentralization produced few noticeable changes in student academic performance. Indeed, some local boards in New York and other cities with decentralized educational authority used their newfound authority to engage in corrupt practices such as hiring relatives for staff positions and demanding kickbacks from suppliers of school materials and services. Where they found evidence of corruption or administrative or academic failures, cities, counties and states abruptly dismissed school boards and, reversing the trend toward decentralization, seized control of

failing schools and placed them under the authority of a centrally appointed superintendent and school board.

decile A division of test scores that contains one-tenth of all scores. Thus, the highest decile would contain the highest tenth of all scores obtained by students; the second decile, the second highest, and so on. The decile has no direct relation to actual scores. Thus, the highest decile of test scores might conceivably contain only failing scores.

decision making A critical element of school and college administration that involves the entire process of problem solving. David Griffiths's classic text *Administrative Theory* (1959) defines decision making as a six-step process that begins with recognizing, defining and limiting a problem, then analyzing and evaluating it and, third, establishing methods for evaluating possible solutions. The last three steps involve collecting data, then developing and selecting the preferred solution and, finally, implementing it.

Declaration of Independence The document that, on July 4, 1776, proclaimed the independence of the 13 British colonies in America from England. After its signing by the Continental Congress, the document lost all legal significance, although its high moral tone would echo throughout the "Age of Revolution" that swept across Europe during the next century. Ironically, the lofty ideals expressed in the declaration had somewhat less impact in the United States, where education was expressly omitted from the "inalienable rights" with which the signers declared their Creator to have endowed all men. Although THOMAS JEFFERSON, BENJAMIN FRANKLIN, BENJAMIN RUSH, John Adams and others favored the inclusion of universal education as a basic right for all Americans, southern delegates and their northern support-

ers feared universal education would represent a first step toward women's rights and the MANUMISSION of slaves, and all mention of it was omitted from the Declaration of Independence and, subsequently, from the Constitution.

Declaration of Rights for Women A statement demanding equal rights and justice for women, issued on July 4, 1876, the 100th anniversary of the signing of the Declaration of Independence. Written by Elizabeth Cady Stanton, Susan B. Anthony and other champions of women's rights in the United States, the declaration demanded for women "all the civil and political rights that belong to citizens of the United States." At the time, girls had yet to obtain equal rights to education at the elementary and secondary school levels, and women were barred from all but a few colleges. Although it did not have an immediate impact on women's education, the declaration marked the beginning of the national debate over women's rights that would continue for a century thereafter. By the end of the 19th century that debate had opened up the doors of almost all public elementary and secondary schools to girls, and two decades later opened the ballot boxes to women.

(See also WOMEN'S EDUCATION.)

Declaration of the Rights of the Child A document adopted unanimously in 1959 by the United Nations General Assembly, declaring every child entitled to certain rights, including a name and nationality, adequate housing, adequate health care and education. The document is similar to the Declaration of Geneva, passed in 1924 by the League of Nations.

decoding The "sounding out" of individual letters and groups of letters to form whole words. Mastery of decoding skills is a basic part of phonics and the translation of printed letters and combinations of letters (graphemes) into sounds (phonemes). The ability to decode a

word, however, does not necessarily produce word comprehension.

(See also PHONEMES; PHONICS.)

deductive approach A system of reasoning or logic that arrives at specific, logical conclusions on the basis of one or more general premises. Based on Aristotelian syllogisms, the deductive approach usually begins with a major proposition, for example, Every human being has a head, two arms, two legs and walks erect, and a minor proposition, The being in the house next door has a head, two arms, two legs and walks erect. From the two propositions, the following conclusion can be logically deduced: The being in the house next door is a human being. Deductive reasoning, however, is only as accurate as the propositions on which it is based, and as in this example, it does not necessarily reach a factual or accurate conclusion. The example cited does not take into account that there are other beings that would fit the description and that not every human being has two arms and two legs.

The opposite of deductive reasoning is inductive reasoning (see INDUCTIVE APPROACH), in which general principles are derived from specific observations, as in laboratory experiments. The teaching of deductive and inductive reasoning are basic to elementary school education.

de facto segregation In education, segregation of students according to race, religion, gender, ethnicity or some other criterion, occurring by custom and not by government fiat or laws. De facto school segregation can occur because of the racial, religious or ethnic makeup of the population in a community whose school draws only children from that community. TRACKING, or grouping students in classrooms according to academic achievement, can produce de facto segregation of classes in an otherwise integrated school. Many American communities have attempted to end de facto

segregation of schools by BUSING children out of their own neighborhoods.

(See also AFRICAN AMERICANS, DE JURE SEGREGATION, DESEGREGATION, SEGREGATION.)

Defense Activity for Non-Traditional Education Support (DANTES) A broad U.S. Department of Defense program that provides support for traditional and nontraditional educational activities for all U.S. military personnel. Created in 1974 as a replacement for the UNITED STATES ARMED FORCES INSTITUTE, DANTES is part of a vast Independent Study Support System that coordinates more than 7,000 independent, off-campus courses offered by accredited colleges and universities to service personnel working toward college degrees. DANTES also coordinates the work of the SERVICEMEN'S OPPORTUNITY COLLEGES that provide special two- and four-year college programs for service personnel. DANTES also administers a wide variety of standard examinations, including ACTs, SATs and GEDs and various examinations for certification in a wide range of specialized trades and occupations, such as medical technicians, computer programming, and so on.

DANTES maintains a complete recording and reporting system, with standard academic transcripts, for all student academic records, and it develops a wide range of nontraditional educational programs for service personnel on duty in isolated areas lacking other educational opportunities.

Defoe, Daniel (1660–1731) English journalist and author, whose *The Family Instructor* (1715; first colonial edition, 1740) was widely used in the colonies by parents to teach their children religious practices and prayers, in areas that lacked such instruction. With the development of academies in the late 17th and early 18th centuries, Defoe's novels (including *Robinson Crusoe*, and *Moll Flanders*) became a standard part of the literature curriculum.

degree A title usually awarded by colleges and universities to signify successful completion of extended studies in a particular subject or combination of subjects. The four types of degrees conferred in American colleges and universities are the associate, bachelor's, master's and doctoral degrees. Unrecognized outside North America, the ASSOCIATE DEGREE is most commonly conferred upon graduates of community and junior colleges, following completion of a two-year course of study, although similar offerings are available at some four-year institutions. Most four-year colleges, however, award BACHELOR'S OR BACCALAUREATE DEGREES, following four years of study in a wide variety of subject areas such as the arts (bachelor of arts, or B.A.), science (bachelor of science, or B.S.), literature (B.LL.), divinity (B.D.), etc. Degree recipients with exceptionally high grade-point averages may receive special commendations representing different levels of "praise": cum laude, "with praise"; magna cum laude, "with great praise"; and summa cum laude, "with highest praise."

The MASTER'S DEGREE is granted after one or two years of graduate school, studies in a subject area or combination of studies and may require the writing of a thesis. Like the bachelor's degree, master's degrees are awarded in the arts, sciences and a wide variety of other subject areas. The DOCTORATE, or highest degree level is awarded after two to five years of post-graduate work and almost always requires the writing of a thesis and completion of comprehensive oral as well as written examinations.

Degrees were first awarded in the earliest, medieval universities in Europe, to differentiate between student novitiates, bachelors or licentiates (with enough knowledge to serve as tutors), masters (who were certified to teach) and doctors (with the highest credentials in their subject area). Only doctors were certified to practice as well as teach their profession. In many European countries where governments

still control universities, a doctorate still entitles its recipient to practice such professions as medicine and law. In the United States, however, a doctorate only reflects academic attainment, and doctors of medicine (M.D.) and jurisprudence (J.D.) and other professionals must pass state or national qualifying examinations to obtain licenses to practice.

Each year, U.S. colleges and universities grant nearly 600,000 associate degrees, more than 1.2 million bachelor's degrees, about 350,000 master's degrees and about 40,000 doctoral degrees. Degrees are awarded in more than 30 broad areas of study from agriculture to zoology and more than 500 specific subjects.

degree (or diploma) mill Any organization that sells diplomas and degrees without requiring completion of standard high school, college or university courses and appropriate demonstration of academic competence. Degree, or diploma, mills usually have no campuses or classrooms and are unaccredited by any of the recognized educational ACCREDITATION agencies. Often run by charlatans working out of temporary offices, degree mills have no admissions requirements and produce "diplomas" available at far less cost at any print shop. Degree mills charge from \$100 to \$5,000 to mail a variety of worthless high school diplomas and bachelor's, master's and doctoral "degrees." Many degree mills claim status as schools of theology and ordain their "graduates" as ministers in nonexistent churches.

Although federal and state agencies have closed hundreds of illegal degree mills and imprisoned many of their operators for fraud, most are difficult to prosecute because their victims are eager participants in the scheme. Only when a victim is accused of presenting fraudulent credentials from a degree mill do authorities ever obtain an opportunity to prosecute the degree mill operator. In 1985, a congressional investigation committee estimated

that at least 500,000 Americans, including 40,000 practicing physicians, held fraudulent diplomas from degree mills. At last count, according to *Bear's Guide to Earning Non-Traditional College Degrees*, there were more than 350 degree mills selling fraudulent diplomas and degrees. The number does not include untold hundreds of fraudulent "Bible" colleges that sell theological degrees and certificates of ordination for as little as \$5.

Although some degree mills are located abroad, the vast majority operate from the United States, many with names similar to those of recognized institutions. Examples have included Clemson College, Colgate College, Columbia School, Dartmouth College, De Paul University (France), Oxford College of Arts and Sciences, Southern California University and Texas University. Most degree mills are difficult to prosecute because few remain at the same location for more than a year or two before moving to a different state and setting up operations under a new name. To prevent fraudulent use of degree-mill "credentials" on job and other applications and on résumés, the U.S. DEPARTMENT OF EDUCATION now maintains a list of nearly 7,000 institutions that participate in federal student-aid programs and are accredited by one or more ACCREDITATION ASSOCIATIONS or agencies recognized by the department.

Degrees of Reading Power A test developed for the College Board and the New York State Education Department to measure critical reading skills of school children. Required in all New York State public schools, the test consists of five- or six-paragraph stories appropriate for readers in each grade level. Each paragraph contains one or more missing words and a list in the margin of the page with possible choices for each missing word. The reader must pick the most appropriate word that fits into the context of the story.

de jure segregation In education, the segregation by law of students according to race, religion, gender, ethnic group, academic achievement or any other criterion chosen by lawmakers or state education officials. Segregation laws of some kind existed in most American states until 1954, when the U.S. Supreme Court declared racial segregation unconstitutional. Subsequently, the federal government and almost all state governments have passed laws ending all de jure segregation except so-called TRACKING, which segregates students on the basis of academic skills.

(See also AFRICAN AMERICANS; BROWN V. BOARD OF EDUCATION OF TOPEKA; DE FACTO SEGREGATION; DESEGREGATION; SEGREGATION.)

Delaware One of the original 13 colonies and the first state to ratify the U.S. Constitution. Education was slow to develop in Delaware, although the state appropriated some funds for private charity schools in 1817. The state established a form of public education for white children with the passage of the Free School Act of 1829, with provisions of some state funds to schools in districts that taxed themselves. Black children were excluded, however. Delaware schools remained inadequate until 1897, when a new state constitution created a state public school system for all children, including a "separate but equal" system for black children. Compulsory education laws, however, were not passed until 1907, when the state required all children to attend school three months a year.

Delaware public schools remained far below average until 1921, when a new state code provided for school funding with state taxes and required a college degree for teacher certification. By 1930, compulsory universal education was the rule in Delaware, although black children remained segregated in their own schools. Although separate, blacks were far from equal, and in 1948, only two black

schools had a 12th grade. The 1954 U.S. Supreme Court ruling in *BROWN V. BOARD OF EDUCATION OF TOPEKA* forced Delaware to begin desegregating its schools, but some counties fought integration for more than two decades. In 1978, however, the task was completed when a state court ordered New Castle County, in the northern part of the state, to transport children across former district lines and integrate all its schools. Delaware has about 200 public elementary and secondary schools with about 115,000 students, of whom 40% are minority children and about 8.5% live in poverty. Student academic proficiency is slightly above average for the nation. Delaware has two public four-year institutions of higher education and three two-year public colleges. It has four private four-year colleges and one private two-year college. Enrollment at four-year colleges is 42,000, with an exceptionally high graduation rate of 64.4%.

dentistry education A four-year course of postgraduate study leading to a D.D.S. (doctor of dental surgery) or D.M.D. (doctor of dental medicine) degree. Like other professional degrees, holders of the D.D.S. and D.M.D. must pass licensing examinations before they can practice their profession. Although dentistry itself dates back to ancient Greece and Rome, most practitioners learned their skills through an apprenticeship system until 1840, when the world's first dental school, the Baltimore College of Dental Surgery, was established in Baltimore, Maryland. With the simultaneous founding of the American Society of Dental Surgery, the conversion of dentistry into a profession had begun, and by the end of the 19th century, most leading medical schools had added schools of dentistry. Dentistry education has expanded to include eight specialties: oral surgery, orthodontics (correction of tooth positioning), prosthodontics (replacing missing teeth), periodontics (gum and bone diseases), endodontics (root canal

work), pediatric dentistry, oral pathology and public health dentistry.

In addition to professional work, there are specialized technical areas of dentistry that do not require dental school education. Dental hygiene, for example, requires only a two-year associate degree from one of the nearly 200 schools of dental hygiene accredited by the Commission on Dental Accreditation of the American Dental Association. Graduates must pass a written and clinical examination to obtain a license to practice. A second technical area requiring only an associate degree is the production and repair of dental fittings and appliances.

departmental organization An administrative arrangement of school, college and university academic operations into separate, autonomous departments based on subject areas, for example, English, mathematics or physical education. Each department is usually headed by a department chairperson (large departments may have assistant chairpersons) who, in addition to fulfilling teaching responsibilities, is responsible for curriculum development, class scheduling and promoting intra- and interdepartmental cooperation. A chairperson also serves as a liaison between department faculty members and the school or college administration to whom the chairperson is ultimately responsible.

Although still rare in elementary schools, departmental organization of secondary schools and colleges developed toward the end of the 19th century as curricula expanded to include higher mathematics and sciences and left few teachers competent to teach all subjects to all ages.

Department of Education Organization Act A 1979 act of Congress creating the U.S. DEPARTMENT OF EDUCATION as a cabinet-level department to administer almost all federal

programs relating to education. Prior to its creation, the department had been a part of the Department of Health, Education and Welfare.

dependents' schools A system of elementary and secondary schools maintained by the federal government for minor dependents of U.S. military and civilian personnel stationed overseas. Once operated by the Department of Defense, the schools were turned over to the U.S. Department of Education and staffed by civilian personnel after the creation of that department in 1979.

deregulation In education, the transfer of authority from district and state boards, bureaucracies and political leaders to local school administrators and faculties. School-based authority has been a subject of controversy since the first public schools opened in the early 19th century. The controversy has smoldered or raged, depending on the particular era, and no topic has fired its flames more than the religio-centric issues of prayer in school and the teaching of evolution. The primary issue underlying deregulation centers on the rights of parents and communities to exercise control over the education of their children. Put another way, it concerns the right and obligation of professional educators in tax-supported schools to teach children truths that controvert the beliefs of parents. The issue has been resolved in nearly as many ways as there are states—largely because the U.S. Constitution leaves the conduct of education to the individual states.

The U.S. Supreme Court has interceded in some areas by expressly banning as unconstitutional all prayer in public schools (see PRAYER IN SCHOOL), along with the teaching of "CREATION SCIENCE" based on biblical recounts of the Earth's formation and the creation of man. The executive branch of the U.S. government also interposed itself in local education in 1975,

with passage of the federal Education for All Handicapped Children Act (later renamed the Individuals with Disabilities Education Act), which guaranteed access of handicapped children to all public schools and forced schools and colleges to obtain federal funds and work with federal inspectors to provide BARRIER-FREE CAMPUSES. Apart from introducing religious instruction, however, the states have the right to exercise as little or as much control over schools as they choose. Some states such as Texas allow a central school board in the state capital to determine all textbooks and lesson plans to be used in every classroom in the state. Others give local district school boards those powers.

Under deregulation, district boards with the power to do so delegate to on-site school administrators and to teachers themselves the authority to determine the curriculum, select textbooks, discipline students, promote or retain students and hire and evaluate teachers. In effect, deregulation in the public school sector represents a variation of administrative systems at private schools and colleges, where most administrative authority is vested in professional educators. Boards of directors at private institutions concern themselves primarily with fund-raising and broad policy decisions affecting academic goals and turn education over to professional educators.

In a typical American public school district, an elected board of education has the authority to micromanage operations at every school within the district. It usually does so through a staff of appointed bureaucrats who may or may not have any background in professional education and whose salaries absorb funds that might otherwise flow directly into education. Costs of noneducative, school board bureaucracies often elevate per-pupil public-school education costs to twice the levels of academically superior private schools. According to U.S. Department of Education studies, most academically superior public schools are

now deregulating or have already done so. Most such schools tend to be in districts with populations at the upper end of the economic and academic achievement scales. However, more than 1,700 communities across America—rich and poor—established so-called CHARTER SCHOOLS, which, while remaining public, are free of all day-to-day controls by district superintendents of schools, elected school boards and local department of education bureaucracies. U.S. Department of Education studies indicate that dispensing with central bureaucracies allows school districts to channel more funds into instruction and pay above-average salaries that attract more effective teachers. The department found, however, that most effective teachers insist on participating in decisions that effect their work and on reasonable autonomy in carrying out their responsibilities. In turn, students perform better and are more attentive in schools where they know their teachers have authority and are indeed in charge. Academic quality also improves because authority over education is in the hands of those who know the students best and can tailor educational decisions to individual needs.

derived score A numerical score based on converting raw scores into a more understandable norm that reflects average performances for a larger population group. Examples of derived scores include AGE-EQUIVALENT scores and GRADE-EQUIVALENT scores. If, for example, the average eight-year-old obtains a raw score of 85 correct answers out of 100 on a specific test on the first day of fourth grade, the derived grade equivalent score would be 4.0, and any child who, regardless of grade level, obtains a raw score of 85 on the same test would obtain a derived score of 4.0.

deschooling A philosophy of education enunciated by Roman Catholic educator and cleric Ivan Illich (1926–) in his 1971 work

Deschooling Society. The Austrian-born Illich criticized traditional schooling as a rigid instrument of indoctrination and domination that prepared students for specific places in the social order of their societies without ever opening their minds to the possibilities of uninhibited learning. As founder and head of the Center for Intercultural Documentation in Mexico, Illich was one of a number of Latin American clerics concerned with enlarging and improving national school systems for the poor in less developed nations.

Many of his ideas took hold in the United States, where African-American civil rights leaders saw the same pedagogical forces described in poor nations at work in the failure of American inner-city schools to reach many poor minority children. Those espousing deschooling called for an end to traditionally rigid, institutionalized schools as we know them and the introduction of new approaches to education based on learning from real life and a wide variety of mentors. Among the proposals were an end to obligatory, graded curricula and the establishment of skill centers where useful skills can be learned. At the heart of the deschooling philosophy was the contention that only the rigidity of adult beliefs and teaching conventions stand in the way of a universal need and desire to learn among all children of all ages. Critics contend this is a naive perception of children, who, at every age, may be subject to important drives that are unassociated and may interfere with the acquisition of formal education.

desegregation The abolition of barriers that separate people by race, religion, ethnicity, gender or any other criterion. Until 1954, most American schools and many other public facilities were segregated by race—by law (de jure) in most southern, southwestern and border states and by custom (de facto) in the rest. In 1954, however, the U.S. Supreme Court ruled

in *BROWN V. BOARD OF EDUCATION OF TOPEKA* that segregated schools were inherently unequal and therefore violated the Constitution by discriminating against a particular class of citizens. The decision marked the beginning of the end to de jure SEGREGATION.

Desegregation did not—and, indeed, does not—mean INTEGRATION. Although desegregation removed all barriers to integration, Americans retained and continue to exercise the right of free association, and the vast majority of whites and AFRICAN AMERICANS in the United States continue to live and attend school in communities where their own races make up the majority of the population. Indeed, in 2000, more than 67% of all black children were attending schools where less than half the students were white, and almost 75% of all Hispanic children were attending schools with predominantly minority students. About one-third of all black children attend schools that are all but completely segregated, with fewer than 10% whites in attendance.

(See also CIVIL RIGHTS ACT OF 1964; INTEGRATION; SEGREGATION.)

detention A punishment that forces children to remain in class under supervision during a period when the children would normally be free for nonclassroom activities. Depending on the individual child's availability, detention may be assessed at the end of the regular class period, at the end of the school day or on Saturday morning, for whatever length of time the school authorities deem appropriate penance for the child's misconduct. Children may be told to do schoolwork during detention or assigned special tasks involving extra academic work or school maintenance chores.

Detroit Tests of Learning Aptitude A series of individually administered tests to determine a student's strengths and weaknesses among various learning abilities. Available in

formats for children three to 18 years old, the tests last from 15 to 45 minutes for children three to nine years old and 50 to 120 minutes for older children. Administered on a one-to-one basis by a psychologist, special education diagnostician or speech/language pathologist, the tests help identify weaknesses in a student's intellectual abilities and permit the school to provide appropriate compensatory education.

The tests use 11 subtests to measure each of four domains of learning aptitude: linguistic, cognitive, attentional and motoric. The tests in each domain include word opposites (the student gives antonyms for words pronounced by the examiner); sentence imitation (student repeats sentences of increasing length and complexity pronounced by the examiner); oral directions (students mark pictured objects named by examiner); word sequences (student repeats series of unrelated words pronounced by examiner); story construction (student tells a story about each of three pictures); design reproduction (student reproduces increasingly complex geometric forms from memory); object sequences (student must recall a series of pictured objects in the order of presentation); symbolic relations (student completes a design pattern by selecting the correct pattern from four choices); conceptual matching (student associates a stimulus picture with one of ten other pictures to demonstrate a concept); word fragments (student reads aloud a list of words, each printed with missing letters); letter sequences (student writes from memory a sequence of letters seen and then withdrawn from view).

Detroit X-Y-Z Plan An ability-grouping program introduced in Detroit, Michigan, public elementary schools in 1919, assigning children to one of three classes in each grade according to their scores on intelligence and achievement tests. The program was the first system-wide TRACKING introduced in American public schools.

developmental age The behavioral characteristics associated with a particular chronological age. Somewhat less precise than either mental age or chronological age, ratios of which are used to determine intelligence quotient, developmental age relates strictly to a person's maturity as exhibited in his or her normal behavior. Many five-year-olds behave like six-year-olds and vice versa, regardless of their mental ages, and the developmental age of any given child can change rapidly, especially during preschool and early school years. For that reason, many schools consider and use developmental age as a more effective basis for admitting and placing children in appropriate grades. Because of wide differences and variability of developmental ages during preschool years, many schools offer a prekindergarten or, as it is often called, a DEVELOPMENTAL KINDERGARTEN, for a mixed-aged grouping of four- and five-year-olds not yet developmentally ready for the academic rigors of standard kindergarten. There is a wide variety of tests to measure developmental age and determine developmental deficiencies, including the Gesell Institute's Developmental Examination (New Haven, Connecticut) and the Denver Developmental Screening Test (Ladoga Publishing Foundation, Denver, Colorado). Most tests measure social skills, visual discrimination, visual memory, auditory memory, eye-hand coordination, motor skills and body sense. To measure social skills, most tests use an informal interview in which the child is asked to talk about his age, family, pets, toys and opinions and define words. Visual discrimination is measured by asking the child to match like objects and letters. The tests measure visual memory by asking the child to reproduce a pattern with blocks, and auditory memory by asking him or her to recall and repeat a series of numbers. Auditory memory and ability to follow directions are also measured by asking the child to perform a series of actions, for exam-

ple, clap hands, touch one shoe and walk to the window. Eye-hand coordination is measured by asking the child to copy simple geometric shapes or balance a tower of blocks. The test of motor skills and body sense check the child's ability to identify parts of the body and follow simple commands to hop on one foot, walk along a line and jump five times.

developmental kindergarten A prekindergarten class designed for five-year-olds whose DEVELOPMENTAL AGE is lower than their chronological age and does not permit them to deal with the academic rigors of standard kindergarten classes. Less academically oriented, developmental kindergarten is designed to teach students mature behavior and, by the end of the year, rejoin their more mature peers in first grade.

developmental reading An individualized approach to reading instruction whereby each student is taught to read at his or her maximum ability, regardless of the levels reached by other students. Under developmental reading programs, reading skills are broken down into their essential elements, and each child is taught each skill in sequence. The program provides diagnosis, remediation and appropriate reading materials for students with development deficiencies, while at the same time it provides appropriate materials to allow abler students to accelerate.

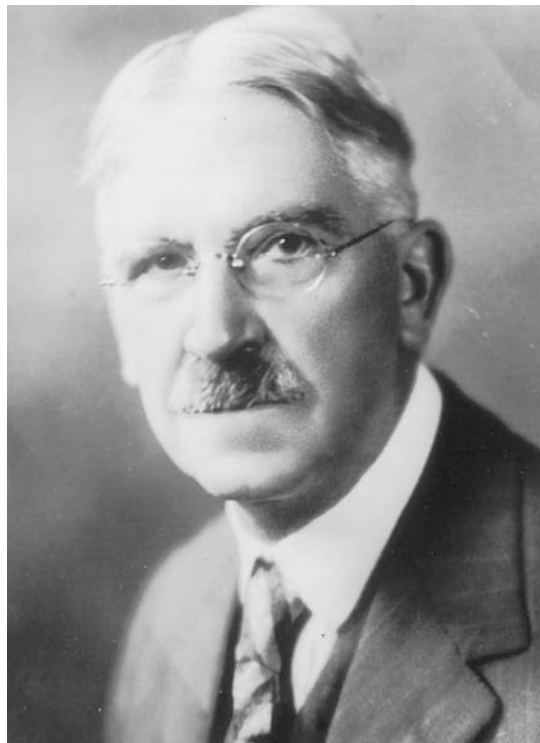
(See also READING.)

developmental theories Any of a wide variety of theories that children pass through a fixed series of definable and measurable physical, mental, emotional and behavioral stages as they evolve from infancy to adulthood, with each stage associated with both chronological age and experience. The first and most renowned developmental theorists, whose works continue to influence education, were JOHN DEWEY, Sigmund Freud and JEAN PIAGET.

development office A division of a school or college's fund-raising program specifically concerned with soliciting large capital gifts, as opposed to annual solicitations. Usually headed by an appointed development officer, the development office tends to limit solicitations to the wealthiest graduates, major foundations, corporations and wealthy individuals with interests that relate to the school's or the college's programs. Development officers usually seek multimillion-dollar gifts needed for new buildings, major renovations or endowment funds to provide permanent financing for professorships or scholarships.

deviation I.Q. The amount by which any INTELLIGENCE QUOTIENT score may vary from the mean and remain tantamount to the mean. Thus, 100 is the mean, or average, I.Q. score of test takers on the Stanford-Binet I.Q. test, but on any given test, so many otherwise average test takers obtain scores that vary in both directions from the mean that they may, for statistical and practical purposes, be considered average. The term *deviation I.Q.* is used to express this variability or standard deviation (s.d.) from the mean. In the case of the Stanford-Binet I.Q. test, the mean is 100 and the standard deviation is about 16, which means any score between 84 and 116 may be considered average. The deviation I.Q. would be expressed as: mean = 100, s.d. = 16.

Dewey, John (1859–1952) American educator, psychologist, philosopher and social critic who revolutionized education and teaching methods in the United States. The father of PROGRESSIVE EDUCATION, Dewey discovered that children learned more and at quicker rates when teachers encouraged their natural curiosity instead of subjecting them to the rigid discipline and corporal punishment of traditional 19th-century classrooms. Using games and various forms of play as vehicles for teaching,



John Dewey (Library of Congress)

Dewey produced educational results that brought him world renown and formed the basis of modern 20th-century educational methodology.

Born in Burlington, Vermont, he earned a B.A. at the University of Vermont and a Ph.D. at Johns Hopkins University. He spent the next 10 years teaching philosophy and psychology at the University of Michigan, where he met his future wife, Harriet Alice Chipman, a brilliant social activist who inspired his deep interest in such social reforms as women's suffrage, compulsory universal education and an end to child labor. Dewey combined his teaching at Michigan with advanced studies in philosophy and in the then-new science of child psychology. While many scoffed at the new science,

Dewey found it to be the missing link for his revolutionary new theory of education, namely, that children learn much the same way as adults, absorbing only that information they need to solve problems they face in real life. Education, he said, was thus not an end in itself but a means for solving problems. In 1894, Dewey moved from the University of Michigan to the chairmanship of the Department of Philosophy at the three-year-old University of Chicago. Two years later, he opened the UNIVERSITY OF CHICAGO LABORATORY SCHOOL, where he put his new theories of education to the test. The school, which soon became known as the Dewey School, served as a model for academically superior schools everywhere in the United States and around the world. It opened with 16 students and two teachers, but within seven years, had grown to 140 students, 23 teachers and 10 assistant teachers, in 12 grades, from preschool through tenth grade. The school assigned each group exciting projects appropriate for their age. The youngest “played” house, learning a variety of tasks such as cooking, sewing, and sawing and nailing wood together to make play furniture, but all the while they were learning the basics of mathematics by measuring, adding and subtracting, and of basic reading skills by following recipes, patterns and plans.

Six-year-olds (first grade) used skills and crafts learned in kindergarten to “build” a farm, using blocks for each of the buildings and planting imaginary crops on a large sand table. By dividing the table into separate fields for different crops, they learned fractions—all, while experiencing immense pleasure “playing.” To the astonishment of the world of education, Dewey’s six-year-olds learned to use measuring sticks to divide the fields into halves and quarters and convert inches to feet, yards, acres, and other units of measurements. They learned volume by counting and measuring bushels. They learned addition and subtrac-

tion, as well as the denominations of money by pretending to take their crops to market to sell.

As their mathematical skills reached what were the third-grade levels, their reading and writing skills kept pace because they needed to make signs to label crops in the fields and bushels for market. They drew elaborate plans to build the farmhouse, barn and stable, labeling each element of the house with properly spelled words, measuring each section carefully to be certain they used the right number of blocks. A wrong measurement or calculation often made the house tilt or sent it falling down. But Dewey believed his students learned as much from their errors as they did by solving problems correctly.

Second graders studied prehistoric life by building make-believe caves (with blocks and huge sheets of paper) and pretending to live in them. At every step, students combined what they read in books with “doing.” Third graders studied early civilizations, while nine-year-olds studied local history and geography. Ten-year-olds studied colonial history and built a frontier log cabin. Dewey introduced the “field trip” to modern education as another teaching tool that captured children’s imaginations. Sixth graders and all the older children worked on more complex projects involving politics, government and economics, and scientific experiments in biology, chemistry and physics. In addition to academics, the children also learned useful skills such as sewing, cooking and carpentry. Dewey called his method learning by indirection because teachers taught everything indirectly. The smallest children simply did what all children do naturally—play by building a make-believe farm; but indirectly their teachers taught them to read, write and calculate, and gave them all the other educational tools they needed to build the farm. “If a child realizes the motive for acquiring skill,” said Dewey, “he is helped in large measure to

secure the skill. Books and the ability to read are, therefore, regarded strictly as tools."

In addition to skills knowledge, the Dewey School taught students to work together and cooperate. Again, through indirection, teachers taught children to govern themselves democratically, with each student contributing to the planning and completion of each project, taking turns as leaders and learning to perform every other student's tasks and substituting for one another. Dewey's goal was to prevent development of gender discrimination and what he called the antidemocratic belief that one person is better or more important than another. Boys learned to cook and spin and sew, and girls learned carpentry, and all learned mutual respect. Dewey's teachers imbued their children with the belief that they were indeed created equal and equally important to the smooth functioning of their miniature democracy. "What does democracy mean," asked Dewey, "save that the individual is to have a share . . . and that . . . through the free and mutual harmonizing of different individuals, the work of the world is better done . . . ?"

Teaching at the Dewey School was more difficult than at conventional schools of the day. Teachers had to be trained in Dewey's methods and child psychology and become knowledgeable in every subject they taught, from sewing and carpentry to physics, music and art. They also had to learn to keep their students excited about learning by seeing the world from a child's as well as an adult's viewpoint. "Like Alice," wrote one of Dewey's teachers, "she [the teacher] must step with her children behind the looking glass and in this imaginative land see all things with their eyes . . . [but] be able to recover her trained vision and from the realistic point of view of an adult supply the guide posts of knowledge and the skills of method." Dewey's students invariably finished the laboratory school two years ahead of their peers in conventional school, an

accomplishment for which he heaped generous praise upon his teachers: "The art of giving shape to human powers," he said, "is the supreme art; one calling into its service the best of artists. . . ." The Dewey Laboratory School became internationally renowned, and its teaching methodology was emulated by hundreds of schools across the United States and around the world. Thirty years later, the Progressive Education Association did an eight-year study of nearly 1,500 graduates of progressive schools in the United States and found that they had done far better at college than had graduates of traditional schools.

Progressive education was the target of considerable criticism both during and after his lifetime because of the public misperception that it promoted permissiveness. Such misperception was largely Dewey's own fault. Although a prolific writer, he expressed his ideas in complex and excruciatingly vague language that allowed for much misunderstanding among those in the practical world of teaching. Many teachers, school administrators and educators misinterpreted Dewey's ideas about learning through play by giving students free rein to play in school with inadequate teacher guidance or discipline. Dewey was, however, a firm believer in strict behavioral controls and close teacher supervision—and appropriate punishment when necessary. He also believed strongly that every child should learn "the basics" of good education—reading, writing, arithmetic, grammar, literature, advanced mathematics, history, foreign languages, the sciences, art and music. Dewey's system of progressive education did not, in other words, change *what* children learned, only *how* they learned it. Instead of fear, he substituted personal discovery as the basic method of teaching and learning. He called it "purposeful learning" and "learning by doing."

Dewey taught American teachers to tie knowledge to student interests and needs

instead of forcing students to memorize isolated facts. He taught them to become partners with students in education and to rely on mutual trust instead of fear and intimidation. He led American education into the 20th century and helped it evolve from a cruel form of breaking children's wills into a way for them to grow and reach their full potential.

In 1904, the University of Chicago was unable or unwilling to provide enough money to keep Dewey's school going, and it closed. Dewey resigned and in 1905 he became professor of philosophy at Columbia University, in New York, where he remained for the rest of his life. He was never again so directly involved in elementary or high school teaching, but he nevertheless helped train thousands of teachers at Columbia's Teachers College. In the course of his Columbia career, he also took several leaves of absence to help such nations as Japan, China, Turkey and Mexico establish public school systems and teacher training schools. A tireless worker for social reform, civil rights and the right of workers (including teachers) to belong to labor unions, Dewey wrote hundreds of articles and books on every imaginable subject, including philosophy, psychology, politics, religion and art—enough to fill 37 volumes.

Dewey helped found the New School for Social Research in New York City, in 1919, and, in 1933, the "University in Exile" at the New School, which helped rescue nearly 200 European scholars from the Nazis. It was later officially renamed the New School Graduate Faculty of Political and Social Science. Dewey also helped found the American Association of University Professors and the first teachers' union in New York City. He was honorary president of the National Education Association, the largest teachers' organization in the United States.

His work to promote international peace and outlaw war (Dewey said war killed more children than it did soldiers) led to the 1928 signing of the Kellogg-Briand Pact, which con-

demned war as a way of solving international arguments.

After the death of his wife in 1927, Dewey, then nearly 70, applied for retirement from Columbia. Stunned by the possibility of losing him, the university rejected his resignation and appointed him its first Professor Emeritus, on full salary, with no teaching obligations. Free to come and go as he pleased, he spent most of the next 10 years advising graduate students and busied himself writing about and working for social reform and world peace.

In 1951, he finally retired from Columbia, after 47 years, but public celebrations of his 80th and 90th birthdays kept him in the limelight until his death from pneumonia, in 1952, at the age of 92. His writings, papers and memorabilia are housed in the Center for Dewey Studies at Southern Illinois University at Carbondale.

(See also KILPATRICK, WILLIAM HEARD.)

Dewey, Melvil (1851–1931) American librarian who developed and published *A Classification and Subject Index for Cataloguing and Arranging the Books and Pamphlets of a Library*. Called the Dewey Decimal or Classification System, it was the first logical, comprehensive, easy-to-use system that permitted indefinite expansion of library holdings. It is now used almost universally by libraries throughout the English-speaking world.

Born in upstate New York, Dewey graduated from Amherst College in Massachusetts in 1874. While an undergraduate, he worked in the Amherst library and continued his work there for two years after graduating. In 1876, he published his system and left Amherst for Boston to help found and organize the first meeting of the American Library Association. He remained its secretary until 1890 and later served two terms as president. During his secretaryship, he and publishers Richard R. Bowker and Frederick Leypoldt founded the *Library Journal*, with Dewey as editor. In 1883,



Melvil Dewey (*Library of Congress*)

he was appointed librarian at Columbia College, in New York, where he founded the School of Library Economy, the first training school for librarians in the United States. In 1888, he was appointed director of the New York State Library in Albany. He moved his training school to the state capital, where it eventually became part of the state educational system and was renamed the State Library School. While in Albany, Dewey became secretary and treasurer of the Board of Regents of the University of the State of New York and state director of libraries, which he transformed into the nation's most efficient system. He helped found the nation's first system of traveling libraries and, in 1890, he founded the Association of State Librarians. He was a pioneer in winning for women librarians full and equal status with men. In 1906, he retired from public life and became involved in the development of resort properties in New York and Florida.

Dewey Decimal (Classification) System

The standard, most widely used method for classifying publications in libraries throughout the English-speaking world. First published in 1876 by its creator MELVIL DEWEY, the system divides all knowledge into 10 classes, each of which is assigned a 100-number span, with the first digit referring to the class of books, the second to one of 10 subclasses, or "divisions," and the third to one of 10 subdivisions or sections. The number spans for the 10 classes are 000–099, General Works (chiefly reference works and periodicals); 100–199, Philosophy and Psychology; 200–299, Religion and Mythology; 300–399, Social Sciences; 400–499, Philology and Language; 500–599, Natural (pure) Sciences; 600–699, Useful Arts and Technology (including such professions as medicine, in addition to agriculture, business, industry, and so on); 700–799, Fine Arts (including sports and recreation); 800–899, Literature; and 900–999, History, Biography, Geography and Travel. The second digit of the three-digit span refers to the division. Thus, within the 800–899 Literature classification, 810 refers to American literature, 820 to English literature, 830 to German literature, and so on. The third digit in the three-digit classification span, in turn, refers to the section within each division. Within the 810–819 American literature division, 811 refers to American poetry and 813 American fiction. To each three-digit classification, a decimal point may then be added with one or more digits that further divide, refine and help identify each type of book by chronology, form, geography or author. Thus, 813.4 refers to American fiction from 1861 to 1900, while 813.46 refers to books by or about American novelist Henry James.

Originally published in a 42-page booklet, *A Classification and Subject Index for Cataloguing and Arranging the Books and Pamphlets of a Library*. The Dewey Decimal System was revised and enlarged 19 times in the century after Dewey

created it. The 1979 revision required three volumes. Although public libraries as well as most small school libraries continue to use the Dewey Decimal Classification system, many academic and research libraries began adopting the LIBRARY OF CONGRESS Classification System in the 1920s. Because of its orientation to large research collections, the Library of Congress gradually replaced the Dewey system in most college and university libraries. Although both classification systems continue to provide access to older collections, computerization and access to bibliographic records via the Internet has rendered both the Dewey and Library of Congress classification systems obsolete for newer collections.

(See also INTERNET; LIBRARY.)

diagnostic-prescriptive teaching A teaching strategy designed to meet the individual needs of students with learning or behavioral problems. The diagnostic segment of the program begins with psychological and academic achievement tests and a complete review of the student's case history. Depending on the evaluation that follows, the prescriptive segment may draw on a wide variety of teaching resources and professional and nonprofessional services. At the classroom level, simple physical rearrangement of the classroom to promote more intimate student-teacher interaction, for example, often spurs some children to perform more effectively. Others may require behavior modification, mastery teaching (see MASTERY LEARNING) or other specialized teaching methods.

In almost all diagnostic-prescriptive teaching, the teacher depends on a large team of cooperative professionals and nonprofessionals to work with each individual, including other school staffers, the school or a nonschool psychologist, remedial and resource teachers, and parents.

diagnostic tests Any of hundreds of written or oral examinations that measure and pin-

point a student's intellectual or academic strengths and weaknesses. Designed to help teachers determine whether a student needs remediation, diagnostic tests can prove unreliable with young children because of wide variations in rates of intellectual development. A six-year-old measured as deficient in mathematical skills, for example, may, within three months, "outgrow" such deficiencies through normal development. Diagnostic tests can, however, serve as important warning signals of impending deficiencies and are essential monitoring devices in the average classroom. The most widely used are those that measure reading and arithmetic skills, such as the Iowa Test of Basic Skills and Stanford Achievement Test.

diagramming sentences A once-common method of teaching grammar by breaking down the parts of a sentence and visually displaying them in diagrammatic form to display syntactical relationships. On a central horizontal axis, the student displayed the subject, verb and object of the verb, each separated by a short vertical line. Beneath each, the student listed all modifiers and modifying phrases, as shown below:

boy/	drops	book
<u>/the</u>	<u>/on/floor</u>	<u>/the</u>
	<u>/the</u>	

Widely used during the first half of the 20th century, the practice all but disappeared in the 1960s after research indicated that diagramming did little to improve student writing skills or understanding of syntax.

Dial-A-Teacher A voluntary program designed to encourage parents to help their children with homework by providing a telephone "hotline" at school that parents can call to obtain homework assignments and to get

help in solving academic problems they do not understand.

dialectic method A method of teaching that relies on disputation or argumentation, with one or more students (or the teacher) taking opposite points of view on an issue in an effort to come to a logical conclusion. Derived from the SOCRATIC METHOD found in the works of Plato, the method was refined by German philosopher Georg Wilhelm Friedrich Hegel (1770–1831), who believed that every thesis implies its own contradiction or antithesis, and that their conflict eventually ends in a synthesis, which in turn becomes a thesis that implies its own antithesis. This dialectical process ultimately leads to absolute knowledge, though Hegel, unlike Socrates, did not conceive of the methods as *eo ipso* didactic.

DIBELS ("dibbels") An acronym for Dynamic Indicators of Basic Early Literacy Skills, a set of tests to screen students in kindergarten and grades 1, 2 and 3 for potential reading problems and to monitor reading progress. Developed by researchers at the University of Oregon, the short DIBELS test is administered annually to determine whether schools receiving grants from the \$1 billion-a-year federal READING FIRST program are making progress in raising student reading proficiency to grade level. Test data not only identifies students at risk of failure but also identifies and holds responsible the schools that are putting those students at risk. Easy to use, reliable and valid, DIBELS measures skills such as letter naming, letter-sound recognition, "sounding out" syllables and words, and read-aloud fluency. Some critics contend that speed of reading—especially so-called nonsense words—does not measure comprehension, but researchers insist that students ability to decode and pronounce nonsense words is a valid predictor of whether they will ultimately develop reading difficul-

ties. Adopted under the NO CHILD LEFT BEHIND ACT—itself a 2001 revision and reauthorization of the ELEMENTARY AND SECONDARY EDUCATION ACT OF 1965—the Reading First program is designed to introduce skills-based reading instruction in struggling and failing schools. Although DIBELS is but one of many evaluation tools, more than 8,200 schools in 2,600 districts across the United States—about one-third of all school districts—were using the program in 2005 at cost of \$1 per student.

SOUNDING OUT

(Students in kindergarten and third grade sound out these nonsense words in the DIBELS test to measure their skills in decoding letters and syllables.)

tob	dos	et	tuf	kej
mun	ik	saf	naf	mid
jag	vof	biv	sel	yic
liv	hef	zis	jorn	vaj
raj	ak	kuj	rit	hik
buj	vog	fap	daf	doz
sig	zog	meb	kag	fin
mup	tik	zok	eg	fub
hoc	wik	fup	rez	yem
toj	mam	en	zez	hij
nos	yez	neg	ek	jal
ak	vib	ic	tak	hul
kan	hez	piv	az	vuv
tej	wiv	pik	fif	koj
lef	fern	tot	zim	ad

"Dick and Jane" books A series of first readers, almost universally used by American elementary schools during the first half of the 20th century. Written by educator WILLIAM SCOTT GRAY, the Dick and Jane books were a precursor of programmed instruction in that they were made up of simple, progressive "building blocks" of reading and understanding skills: "This is Jane"; "See Jane run"; "Run, Jane, run"; and so on.

Gray was on the faculty of the University of Chicago from 1914 to 1950 and was dean of the College of Education from 1917 to 1931. An active researcher in reading instruction and author of about 500 books, articles and research reports, he was founder of the International Reading Association and coauthored dozens of basic readers for elementary school children. All, however, fell into disfavor after the 1950s because of the sheer boredom they induced. Responding to children's need for more action in the stories they read, teachers turned more and more to children's literature as basic readers, and Dick and Jane have all but passed from the American literary scene.

Dickinson, Jonathan (1688–1747) American clergyman, school master, and founding president, in 1747, of the COLLEGE OF NEW JERSEY, in Elizabethtown. The college later moved to Nassau Hall in Princeton, New Jersey, and eventually became Princeton University.

Born in Massachusetts, Dickinson graduated from YALE College in 1706, studied theology and became minister of the Presbyterian Church in Elizabethtown (later Elizabeth), New Jersey, where he remained the rest of his life. Like many residents of the area, Dickinson was eager to found a "seminary of learning" in the Middle Colonies, and with the help of three fellow pastors and three influential laymen, he obtained a royal charter for the college in 1746. Unlike the charters of its three predecessor colleges in the colonies, HARVARD, the COLLEGE OF WILLIAM AND MARY and Yale, Princeton's founding charter made no reference to any religious faith or denomination. From its beginnings, the college was open to students of all beliefs, so that ". . . those of every religious denomination may have free and equal liberty and advantages of education. . . ." Classes began in Dickinson's parsonage with eight students in May 1847, and he died eight months later of pleurisy.

dictionary A published, alphabetical compilation of words in a language that gives their meanings, spellings, pronunciations, syllabifications and, often, etymologies. Derived from the Latin word *dictio*, or "word," dictionaries date back at least to ancient Nineveh, where the earliest known dictionaries from Assyrian King Ashurbanipal's library consisted of clay tablets with columns of cuneiform.

Dr. Samuel Johnson's great dictionary of 1755 was the standard reference work in the American colonies and the English-speaking world until 1806, when NOAH WEBSTER compiled *A Compendious Dictionary of the English Language*, with 5,000 more words than Johnson's. Although an attorney, Webster had spent several years as a classroom teacher and had written a variety of school textbooks, including a widely used spelling book. A fierce patriot, Webster saw his books—and especially his Americanized dictionary—as a medium with which to bind the people of the new nation together. "As an independent nation," he wrote in 1789, "our honor requires us to have a system of our own, in language as well as government." In addition to the new words—most were American neologisms—Webster's dictionary reformed the English language by creating peculiarly American, phonetic spellings that made it easier for illiterates—adults as well as children—to learn to read, write, spell and speak correctly. He eliminated the *k* in words such as *musick* and replaced Norman-origin spellings in words such as *centre*, *theatre* and *humour*, with phonetic spellings (*center*, *theater* and *humor*).

Webster compiled an even more ambitious dictionary in 1828 to display ". . . a far more correct state of the language. . . ." A massive, two-volume work, *An American Dictionary of the English Language* contained about 70,000 entries and more than 30,000 definitions and descriptions of American laws, customs, ideas and institutions. Webster dedicated his work to the American people, with his ". . . ardent wishes

for their improvement and their happiness; and for the continued increase of the wealth, the learning, the moral and religious elevation of character, and the glory of my country."

In modern education, the published dictionary, while still available for all age groups, is gradually disappearing from most student bookshelves in favor of electronic spelling devices and on-line dictionaries.

didactic teaching A method of instruction that relies entirely on lectures to deliver information in the classroom. Students are expected to listen silently, take notes assiduously and refrain from any classroom discussions. Didactic teaching is usually limited to large college and graduate school classes.

differentiated curriculum A program of instruction that differs from the standard curriculum by including or substituting courses designed to meet special needs. There are seven standard differentiated curricula, each designed for a particular category of student needs: (1) bilingual education (for children without an adequate command of English to cope with the standard curriculum); (2) education for the (economically and culturally) disadvantaged (usually rural); (3) education for the gifted; (4) education for the handicapped; (5) migrant education (for children of migrant workers, who do not settle in a community long enough to provide their children with a continuum of education); (6) urban education (for children of the inner city); and (7) other differentiated curricula. If the differentiated curriculum varies too significantly from the standard curriculum, graduates of such programs are often awarded "differentiated diplomas," in lieu of conventional diplomas, to signify the successful completion of the program in which they were enrolled.

differentiated staffing A faculty made up of teams, whose members have a variety of

skill levels and teaching responsibilities commensurate with those skills. Thus, a typical team would have a MASTER TEACHER as its senior member, responsible for developing broad teaching policy; a regular teacher, skilled in classroom instruction; a student teacher to undertake one-to-one tutoring; and a teacher aide, responsible for supervising students preparing their homework, detained for disciplinary reasons or otherwise isolated from the class.

difficulty index (DI) Any device for measuring the difficulty, and, therefore, the validity of a test question or test. Thus, any question that 100% of test takers answer incorrectly or correctly over an extended period is probably invalid as a question for measuring student academic achievement. In general, where $DI = [LT].10$ (i.e., fewer than 10% of test takers consistently respond correctly) the question may well be an invalid measure of student achievement due to its level of difficulty in relation to accumulated student knowledge. Similarly, if $DI = [GT].90$, the question may be equally invalid because of its simplicity.

Digest of Education Statistics (DES) A massive annual compilation of virtually all statistics relating to American education. Prepared by the U.S. Department of Education's National Center for Education Statistics, *DES* is the most comprehensive reference work of its kind, covering all statistical information on American education from kindergarten through graduate school.

digraph Two contiguous letters pronounced as a single sound, such as *ai*, *ea* and *ie* (vowel digraphs) or *ch*, *ck*, or *gh* (consonant digraphs).

diocesan schools Roman Catholic schools, usually secondary schools, which are governed by the diocese, or bishopric. Unlike PAROCHIAL

SCHOOLS, which are usually elementary schools run by local parish priests, diocesan schools are supervised by school boards appointed by the bishop of the region and his immediate aides.

diorama A three-dimensional representation of a scene, using life-sized or miniaturized sculptured figures, lifelike details and a painted background. Used as a pedagogical device in most elementary and many secondary schools, creation of a diorama not only helps students develop motor skills and artistic creativity, it encourages them to study in depth the life and times surrounding the scene they create.

diploma An official document certifying graduation from an educational institution. Derived from the identically spelled (once transliterated) Greek word meaning "folded paper," diploma refers to the actual document, not the degree it confers.

diploma mill See DEGREE MILL.

diplomate Literally, one who holds a diploma, but usually limited in meaning to holders of advanced professional degrees and licensed by professional societies to practice their professions. Examples of diplomates are physicians who have taken advanced training in a medical specialty and passed intensive examinations administered by a board of senior specialists.

directed reading activity The teaching strategy used in most basal reading programs and consisting of five steps: reading readiness, silent reading, discussion and interpretation, skill development and practice, and follow-up activities. The reading readiness stage consists of providing students with the background to the story about to be read and determining that each student understands the concepts the story will present. After guided, silent reading

and a class discussion of the story, the teacher then helps students with skill development, including ascertaining that each student understands the story and its meaning and has a mastery of the vocabulary in the story and of the decoding skills needed to master that vocabulary. Follow-up activities may include using a workbook or introducing artistic, musical or writing activities that tie into the story.

direct instruction An individualized and highly structured method of step-by-step, pre-sequenced teaching, using materials most appropriate to educational goals and to each student's abilities. Although direct instruction demands intensive student participation, all the work is teacher-determined and teacher-directed. Direct instruction consists of four stages: teacher analysis and definition of goals, with selection of appropriate materials; teacher instruction; teacher demonstration; and student practice, coupled with immediate teacher response and, if necessary, corrective instruction. Most direct instruction programs are explicit and leave little discretion to the teacher.

(See also DIRECT INSTRUCTIONAL SYSTEM FOR TEACHING ARITHMETIC AND READING.)

Direct Instructional System for Teaching Arithmetic and Reading (DISTAR) A highly structured, direct instruction teaching program that leaves nothing to the discretion of teachers. The program dictates virtually every teacher statement, action and reaction to each of the strictly sequenced student practice activities. Created in 1977 with a grant from the U.S. Office of Education (now the U.S. DEPARTMENT OF EDUCATION), DISTAR is designed for children in preschool through third grade and consists of three levels each of programs for reading, language and arithmetic. DISTAR also includes teacher training programs, strategy games, activity kits and mastery tests.

direct methods A broad system of foreign language instruction by which students learn a new language much the way they learned their own native tongue as infants. Instead of traditional textbooks and rote memorization of vocabulary and rules of grammar, students use the foreign language as the sole means of communication and learn to associate word and sentences with actual objects and actions. Actual usage becomes the vehicle of learning instead of rote memorization. Use of the student's native language is discouraged. Long in use by commercial foreign language schools, which can teach relative fluency at an intermediate level in two weeks of six-hour-a-day, intensive courses, direct teaching of foreign languages was introduced into many American elementary schools in the 1960s. Because it is designed to teach only fluency and not literacy, it proved a valuable vehicle for teaching third graders foreign languages at an early age, and, in turn, permitted such students to perform far better when they entered seventh grade and began foreign-language literacy training.

(See also IMMERSION.)

direct reading-thinking activity A teaching technique associated with basal reading programs that encourages students to "think aloud" after reading silently, and thus enunciate the meaning of what they have read and how it relates to their own lives.

Disabilities Education Act See EDUCATION FOR ALL HANDICAPPED CHILDREN ACT; INDIVIDUALS WITH DISABILITIES EDUCATION ACT.

disadvantaged students An imprecise category of intellectually and physically normal students whose economic and cultural circumstances are among the lowest in the United States. Depending upon the community, the ranking may vary from the lowest one-third to the lowest 10%. Regardless of specific rankings,

disadvantaged children tend to be members of minority groups, have a poor command of English, consistently score below average on standardized tests of basic skills, have disproportionately high retention rates and are more likely to be assigned to low-ability classes for the non-college-bound.

The education of disadvantaged children, who should not be confused with HANDICAPPED, LEARNING DISABLED OR MENTALLY RETARDED children, has proved a major problem for American educators, who seldom had to deal with them until after World War II. Before then, compulsory education laws in many states were enforced so laxly that, as late as 1910, only 10% of American children—almost all advantaged, white children—enrolled in high schools. The rest, often as young as 5, went to work in fields, factories and mines. Even by 1940, only 30% of American children completed high school. It was after World War II, with the passage of civil rights legislation (see CIVIL RIGHTS ACT OF 1964), that the idea of universal public education was finally translated into deliberate action by state and local officials across the land. Unfortunately, most school systems had enormous difficulty adapting to the needs of newly enrolled disadvantaged children, who often did not know how to conform to behavioral expectations that differed from those of their homes and neighborhoods.

For the most part, poor black and Hispanic children lacked competitive academic skills and were far less able to understand abstractions than white children. In many instances, schools deemed that poor and minority children were either incorrigible or learning handicapped and often misinterpreted poor language skills, conceptual misunderstandings and cultural differences as the result of "bad attitudes" or learning disabilities. Poor and minority students were, therefore, consistently less likely than whites to be assigned to programs for the gifted and talented and more likely than whites

to be assigned to vocational programs that train for low-paying occupations such as building maintenance, commercial sewing and institutional care. One study by sociologist Jane Mercer found schools 150% more likely to label black children mentally retarded than whites and three times more likely to classify Hispanic children as retarded.

To correct the situation, some states have established strict standards for identifying children as learning-disabled, and both state and federal courts have ruled that all children have the right to due process before a school system can so classify them. In other words, the system must prove, beyond a reasonable doubt, that children are indeed handicapped. California courts even ruled (*Larry P. v. Riles*) that schools can no longer use intelligence tests as proof that minority children are handicapped. To prevent schools from confusing cultural differences with learning handicaps, many major cities with large minority populations have voluntarily abandoned the practice. In addition, many schools have established BILINGUAL EDUCATION programs that permit immigrant children to continue their education in their native language while they learn English. Bilingual education programs, however, have done little to improve the English-language literacy skills needed for integration in the United States economic and cultural mainstream. Indeed, New York City found that 90% of elementary school students in bilingual education classes were unable to pass English language competency tests after three years of such education.

In a broader sense, almost all states have established special programs for poor and non-English-speaking children to help them compensate for educational handicaps born of poverty or cultural differences. The programs are outgrowths of the ECONOMIC OPPORTUNITY ACT (or WAR ON POVERTY) and the ELEMENTARY AND SECONDARY EDUCATION ACT, passed by the federal government in 1964 and 1965, respec-

tively, to fund three categories of aid: nutrition and health (school lunch programs), school readiness (HEAD START, REMEDIATION and COMPENSATORY EDUCATION) and DESEGREGATION. Most aid under these programs were consolidated under Chapters I and II of the Education Consolidation Improvement Act, which was part of an omnibus Budget Reconciliation Act passed in 1981. Chapter I (Financial Assistance to Meet Special Educational Needs of Disadvantaged Children) provided for free or reduced-price lunches for poor children and earmarked funds for extra teachers, instructional aides, remedial programs and special materials for schools with large concentrations of poor children. Although poverty rates have declined from 22.2% of the population in 1960 to 12.5% in 2003, about 15% of American school-aged children (5 to 17) remain in poverty. The only requirement to receive help is for the child to score substantially below grade level on standard mathematics and reading tests. The school readiness programs were designed to prepare disadvantaged children for school. Disadvantaged children typically begin school as much as two years behind white middle-class children. The centerpiece of the school readiness program was Operation Head Start.

The third category of educational compensation for the disadvantaged—namely, school desegregation—has been difficult to implement, despite court orders and often ample funds for Busing children from predominantly minority districts to racially diversified schools. Although Congress and the courts have been able to eliminate DE JURE SEGREGATION, widespread DE FACTO SEGREGATION persists as a central problem for American education in the thousands of neighborhoods where one racial, ethnic or language group predominates. Studies such as the COLEMAN REPORT have shown a clear relationship between poverty and segregation and poor school performance. Poverty rates for blacks and Hispanics are more than

twice as high as the rates for whites—24.4% and 22.5%, respectively, compared with only 10.5% for whites—and black and Hispanic nine-year-olds score about 8.5% and 12%, respectively, below white children of the same age in reading and mathematics proficiency. Other research has proved that desegregation lifts the academic performance of minority students, particularly when they enroll in desegregated schools during their earliest school years. But parental resistance grew widespread, with black parents objecting to their children being bused long distances from their neighborhoods, arriving exhausted at schools too far away for parents ever to participate in school activities. Most white parents were equally upset, objecting to their children being bused from good schools in white neighborhoods to inadequate schools in black neighborhoods. One by one, the school districts under court edict to bus children to out-of-district schools applied for—and obtained—relief from busing orders. By the beginning of the 1999 school year, desegregation plans in Charlotte, Boston and other cities had been abandoned, and busing as a vehicle for desegregation all but came to a halt across the United States.

discipline (subject) A field of study, as in the discipline of mathematics or the discipline of English. Derived from the Latin *disciplina*, “teaching or learning,” the term refers to subject matter in the broadest sense rather than a particular class, such as senior high school English. Many universities offer degrees in interdisciplinary studies that combine study of two or more disciplines, such as economics and history, for example.

discipline, student The control of student internal and external behavior to promote maximum classroom learning. Until the 20th century, classroom discipline was maintained by physically enforcing a strict code of student

silence. Students were expected to remain alert but virtually immobile in their seats, while teachers lectured and students took notes assiduously and answered questions only when asked. Students caught napping or otherwise violating rules of behavior were summarily whipped, either with an actual whip, a stick or a ferule. Intellectual lapses—giving an incorrect answer—earned either physical punishment or the humiliation of sitting on a high stool, in and facing the front corner of the classroom, and wearing a conical “DUNCE” cap.

Although CORPORAL PUNISHMENT remains legal in 22 American states, most teachers refrain from its use—largely because of the risk they run of being accused of and sued for assault. Modern discipline is based on active teaching of self-discipline and on maintaining student interest. Other elements promoting discipline include the teacher’s personality and pedagogical skills, teacher authority, teacher rapport with students, school administrative support, student age and attitudes, student needs, subject matter, student peer culture and parental attitudes and support.

Aside from various forms of direct student-teacher confrontations, the various forms of discipline still in practice are DETENTION, expulsion from the classroom, warnings to parents, suspension from school, and expulsion. Teacher-student confrontations can take many forms, ranging from warm consultative discussions and special help for the students to warnings of harsher consequences if the student does not change his or her behavior. The most serious disciplinary problems in order of frequency, as reported by public school teachers, are: students come unprepared to learn, student apathy, student disrespect for teachers, student absenteeism, verbal abuse of teachers, student tardiness, student use of alcohol and physical conflicts among students. Although only about 5% of teachers cite physical conflicts among students as a serious problem in their schools and fewer

than 1% cite student possession of weapons as a problem, students themselves disagree, with 19% of eighth graders reporting that physical conflicts are a serious problem at school, and 8.5% of all high school students reporting that they themselves carry weapons to school. Nearly one-third of all high school students report having property stolen; nearly 12.5% say they were in physical fights on school property; 9% say they were threatened or injured with a weapon on school property during the current academic year; and 6.6% often feel too unsafe to go to school. Many schools across the United States use metal detectors at their entrances to prevent students from smuggling weapons into school, and some inner-city schools employ armed guards to patrol hallways to prevent violence in school. Nonetheless, 6.4% of public high school students say they carry weapons to school, 5% use alcohol at school, 7.2% use marijuana, and an astonishing 28% say they have been offered, given or have bought or sold illegal drugs on school property.

Hampering efforts to maintain discipline has been the so-called students' rights movement, which, since 1965, has seen students (and their families) turn to lawyers to sue school administrators for disciplining students. Although lawsuits have uncovered instances of probable unfairness (91% of black children have won challenges to expulsion, compared with 38% of whites), many have bordered on the ludicrous, such as some students who have sued schools for violations of First Amendment rights after teachers demanded that they remain quiet in class.

Technology has introduced a new category of disciplinary problems at many schools. Laptop computers, text-messaging machines, cell phones and other devices all have the potential to distract students from classroom assignments. Not only do cell-phone rings cause a din in classrooms and school corridors, but students also often disrupt classroom and school

activities by answering their phones, conversing or sending e-mails while teachers or other students are engaged in academic or other school exercises. Efforts by school administrators to ban cell phones have met with stern resistance by parents who see the devices as tools to keep in touch with and keep track of their children. About half of all high-school-age children have cell phones, and in many high schools the figure is closer to 90%. Although many schools—and some states—tried banning cell phone use in schools, all began relenting after a spate of school shootings in which students were unable to call for help. Although many schools continue to ban cell phones altogether, most have adopted compromise solutions such as banning their use in classrooms, insisting that they be kept out of sight at all times, or requiring students to check cell phones in a school office during the school day.

To combat the high-tech cheating that has become inherent with laptop computers and text-messaging devices, clever teachers have simply converted traditional testing into the equivalent of open book-examinations, allowing students to check the Internet and discuss test answers with one another electronically. Because they involve far more than rote learning, such exercises usually prove far more challenging to students and, of course, to the teachers, who must design far more complex examinations. Schools that have tried the approach—largely private schools—report having all but eliminated cheating as a disciplinary problem.

(See also VIOLENCE.)

discordant education The conflict, or discordance, between what schools have traditionally attempted to teach children and what the parents of those children were trying to teach them. Historically, discordant education in the United States has caused the most conflict for two broad population groups: immi-

grants and evangelical Christian Protestants. The latter, who believe in literal scriptural interpretation of the creation story, have, for more than a century, fought what they consider the heretical teaching of Darwin's theory of EVOLUTION in public schools.

Immigrants first confronted discordant education in the late 19th century, when public schools were committed to a program of Americanization aimed at converting all children into Protestant Americans. The process was designed to strip them of their native languages and cultural traditions and invest in them new standards of behavior, dress, morality, religious beliefs and hygiene, as well as teach them a new language. "Americanization is a spiritual thing," said New York City School Superintendent William Ettinger in 1918. "Broadly speaking, we mean by it an appreciation of the institutions of this country [and] absolute forgetfulness of all obligations or connections with other countries because of descent or birth." The process inevitably produced conflicts between schools, parents, church leaders and organizations that promoted ethnicity and ties to members' former homelands. The result for children was, and, for most Hispanic immigrants and many African Americans, continues to be, discordant education that teaches students two conflicting sets of knowledge and values.

discovery method A teaching method based on permitting a student to acquire knowledge by discovering it directly, usually through experimentation. Most commonly used in laboratory science experiments, the discovery method can be applied to all levels of education and in almost all subjects if the teacher points the student in the proper direction and provides enough materials in correct sequence to permit the inevitable discovery.

discrepancy evaluation The process of assessing educational programs by periodically

comparing the program activities and results with the original expectations and goals. The aim of discrepancy evaluation is to determine whether to continue, discontinue or alter the program. Discrepancy evaluation usually involves at least four phases: reexamination of program design to see that it conforms to the original; examination of actual program implementation for discrepancies with the original plan; assessment of the results to see if they conform to original program goals; and assessment of costs to see that they are within budgetary limits and to determine cost-benefit ratios.

discrimination The act of distinguishing or differentiating, usually to permit an intellectual, physical, emotional or social choice. In the physical sense, sensory discrimination permits an individual to distinguish between various sights, sounds, smells, etc. In the social sense, the term has a pejorative connotation when used to refer to unequal treatment of individuals because of race, ethnicity, religion, gender, age or social class.

discrimination index Any measurement that indicates the extent to which a test item differentiates between those with the ability it is supposed to measure and those without it. A test item measuring fluency in French, for example, would have a positive discrimination index if test-takers fluent in French answer the item correctly more frequently than those who are not fluent. It would have a negative index if nonfluent test takers answered it correctly as often or more often than fluent test-takers. Discrimination indexes are usually expressed in a range from -1.00 to $+1.00$.

discussion method A relatively modern pedagogical technique involving a free exchange of ideas between students and teacher. The method encourages in-depth analysis of complex

concepts, thoughtful interchange of ideas, polite social intercourse, respect for the ideas of others, recognition that concepts are open to a variety of interpretations, with few clear-cut “right” or “wrong” positions. In the discussion method, the teacher must usually present the topic for discussion, moderate student exchanges, remain open to all ideas presented and help the group arrive at a conclusion, without imposing that conclusion or otherwise dampening student enthusiasm for open discussion.

disruptive behavior Any student conduct that interferes with the normal classroom learning process or routine school activities. Disruptive behavior includes unacceptable language; overt defiance of adult instructions or school rules; interrupting school or classroom activities; and dressing or otherwise presenting oneself in a way calculated to draw attention to oneself and distract others from their work and required activities. There are a wide variety of appropriate teacher responses to disruptive behavior, including assertion of teacher authority, one-to-one teacher-student discussion aimed at analyzing the causes of the disruptive behavior, and imposition of punishment.

(See DISCIPLINE.)

dissertation An extended scholarly work, usually longer than 10,000 words, based on independent research, written in fulfillment of requirements for a doctoral or other advanced degree. Dissertations are usually prepared under the direction of and must be approved by a faculty committee. They must display an in-depth knowledge of the subject matter and demonstrate a complete command of research methods. Rules for dissertations vary from institution to institution. In general, dissertations must be presented according to a list of strict guidelines, with a specified number of copies to be published in bound form by any of several specialized publishing firms. They must then be

submitted to the university library for inclusion in its catalogue as a source of data for other researchers. In addition, most major universities require that dissertations be submitted to University Microfilms, Ann Arbor, Michigan, to be listed in *Dissertation Abstracts International* and to be microfilmed and made available for purchase by libraries and researchers.

Dissertation Abstracts International (DAI) A monthly compilation of abstracts of doctoral dissertations submitted to University Microfilms, Ann Arbor, Michigan. First published in 1938, DAI is published in two volumes, the first for dissertations on the humanities and social sciences, the second for dissertations on the sciences and engineering. DAI publishes an annual index and the encyclopedic *Comprehensive Dissertation Index* of abstracts of hundreds of thousands of dissertations dating back to 1861.

distance learning The delivery of formal courses and educational programs to students off-site via the mail, Internet, cable television or other communications media. The fastest growing segment of higher education during the first years of the 21st century—particularly the ADULT EDUCATION sector—distance learning offers thousands of secondary school, college and graduate school courses in almost every subject area to millions of students around the world. Individually or in partnerships and consortia with other institutions, more than 5,000 two- and four-year colleges and graduate schools, as well as proprietary, for-profit colleges and schools, offer distance-learning programs leading to high school diplomas, associate, bachelor’s and graduate degrees, and certificates attesting to skills proficiency. Distance-learning providers train new employees and upgrade business and other job skills of trainees, workers and executives at several thousand corporations in every area of American industry.

Distance learning is usually classified according to delivery system. CORRESPONDENCE SCHOOLS—the oldest form of distance learning—rely on the mails to deliver printed materials and/or prerecorded taped or video courses to their students. With the development of the Internet, most distance learning takes place electronically on the computer, although some courses are delivered by one-way or two-way (interactive) audio or video courses.

Distance learning allows students with computers to attend classes 24 hours a day, without adhering to any rigid schedule, thus completing courses and earning undergraduate and graduate degrees or certificates of course completion at their own pace. Unlike conventional education, which limits individual student assistance to normal office hours, distance learning reaches across time (and ethno-religious) zones around the world, providing 24-hour-a-day instruction and help lines, 365 days a year. The range of academic quality mirrors that of conventional public and vocational school, college and graduate school education. The most demanding distance-learning colleges require enrollees to take the same pre-college entrance examinations, charge the same tuition (upwards of \$500 per credit) for each course, and require students to submit the same demanding theses and pass the same rigid final examinations as students on campus. Most provide students with a syllabus for each course that includes all tests to be taken, the required essay topics and the text materials to be covered. Course materials include complete sets of instructor lectures (either in print form, on videotape or interactively) and copies of tests students must take to pass the course. Some colleges limit enrollment in specific courses (often to as few as 20 students) to permit greater interaction between students and instructors. Other schools offer courses worldwide to almost unlimited numbers of students, either directly or indirectly through outsourc-



Fourth- and fifth-graders watch a distance-learning program on the left screen, while their classroom is on the right screen. (Associated Press)

ing firms that offer a virtually unlimited electronic course catalog with offerings from the entire range of colleges.

Students enrolled in distance learning at accredited colleges and universities have electronic (or physical) access to all college and university services, such as libraries, bookstores and so on, and they can avail themselves of all the standard college and government FINANCIAL AID programs open to students at conventional campuses. Most distance learning colleges allow CROSS-REGISTRATION and accept credits for on-line courses taken at other colleges. Indeed, most colleges participate in consortia that permit students at one college to take an unlimited

number of online courses for credit from other member colleges in the consortia. Such consortia allow member colleges to expand their curricula in logarithmic proportions without adding faculty or building new classroom or laboratory facilities. One group of about 40 colleges in 22 states formed the Western Governors University, with more than 1,000 courses on-line, while the Southern Regional Education Board's Electronic Campus began with more than 3,000 on-line courses and more than 100 degree programs from more than 250 participating institutions in 16 states. In Britain, the government established a gigantic, globe-spanning "e-university" to compete with those of the United States by bringing together on-line institutions in Britain, China, Malaysia, Singapore and the United States. In one of the most far-reaching programs, the U.S. Department of Defense has established a \$600 million distance-learning curriculum that enables any soldier to take distance learning courses on the Internet at little or no cost.

Ironically, the universal reach of distance learning has not produced universal success or universal student acceptance—especially in traditional academic areas, where American universities invested more than \$500 million in the mid-1990s on Web-based course offerings. By 2000, spending on e-learning had dropped to \$17 million, and the University of California, New York University and many other similar institutions had abandoned some distance learning. The 40-college consortium that had formed Western Governors University reduced its offerings to teacher training, while New York's Columbia University was losing substantially from its e-learning venture with the London School of Economics and Political Science, the British Library and the University of Chicago, among others. While e-learning has proved a major success in career and vocational education, it has, apparently, failed to penetrate traditional academe, where most 18-to-

24-year-old students who seek a conventional bachelor's degree in the sciences and humanities seem intent on doing so in traditional campus settings, involving face-to-face contact with professors in conventional classrooms with other students their age.

For all others, however, distance learning has proved enormously successful by providing faster learning at lower costs to both provider and consumer with an ideal combination of self-instruction and instructor-led learning that permits students to continue workday routines while enhancing both the knowledge and the skills they need to expand workplace opportunities and earnings. For e-schools that put together the right courses, distance learning can be profitable for both student and school. It costs about \$50,000 to design and market an on-line course, but, at \$500 a credit, a distance-learning course can begin to yield profits to providers after the first 100 students have signed up—and "virtual classrooms" have virtually no limit to the number of students they can hold. As for students, tuition costs are seldom lower than at conventional colleges, but students reap enormous savings in time, travel and living costs associated with conventional colleges. Distance learning allows them to live at home, hold full-time jobs and continue their education at their own pace in their spare time. Many rural states have tied the branches of their university and community college systems together on the Internet to allow students anywhere in the state to attend school at one campus with limited course offerings and benefit from the diversified course offerings of the entire higher education system in the state.

Distance learning has made it possible for budget-strapped high schools as well as colleges to expand their curricula without adding new faculty. Many smaller rural schools have formed cooperatives with similar schools in other areas to hire a single teacher to provide on-line instruction that would not attract

enough students at any individual participating school to warrant hiring a new teacher—for a foreign language, for example, or physics. One private distance-learning company has contracted to provide **ADVANCED PLACEMENT** courses to hundreds of high schools whose budgets do not permit costly hiring of teachers for such courses.

The distance-learning explosion has also produced a huge on-line education support industry, with many companies offering 24-hour-a-day “e-tutoring,” essay writing and other academic assistance for students in virtually every subject area. Specialized chatrooms at one tutoring service are staffed 24 hours a day by hundreds of tutors prepared to help thousands of students with their schoolwork each day in such subjects as Spanish, math or science. Students simply e-mail questions in advance to speed the process or chat directly with teachers for live help. Another private firm provides high school equivalency courses and examinations under the **GENERAL EDUCATIONAL DEVELOPMENT PROGRAM**, and still other companies offer on-line preparation for college and graduate school entrance examinations.

The pioneer in distance learning among proprietary, for-profit institutions was University of Phoenix Online. Founded in 1976, Phoenix had grown into America’s largest private university by 2005, with 200,000 students and 17,000 instructors at 142 campuses and on the Internet. Operating out of rented offices, with no full-time faculty, library or other conventional college facilities, Phoenix limited its students to adults at least 21 years old and its course offerings for bachelor’s and master’s degrees to areas outside the humanities—e.g., business, information technology, health and education. The profit-making potential of such education, with its worldwide reach, stirred up a number of controversies, however—both in and out of the world of education. The division of the huge—and

quick—profits online courses can generate has been the focus of harsh negotiations and bitter conflicts between college administrators, faculty and outsource providers about who should profit most from such courses—the college that transmits each course as part of an accredited degree program, the faculty member who designs, develops and teaches each course, or the provider who ties the course to the World Wide Web and delivers it to the ultimate consumer. The proliferation of distance learning has also raised concerns about quality controls, with the U.S. Department of Education warning that some Web-based education contains a lot of useless and, indeed, academically unreliable materials. Reacting to the department’s warning, Congress authorized formation of a congressional Web-Based Education Commission to determine whether to establish a national accreditation system for on-line courses.

The most popular on-line disciplines in order of preference are business, education, nursing, information systems and liberal arts. Two-thirds of the students enrolled in distance learning are 25 or more years old, and two-thirds of all students are female. More than 70% are full-time students—that is, they take more than 30 credit hours of courses a week. More than half plan to earn degrees and 22% are on-line to advance their careers. Because of the 24-hour-a-day availability of on-line instruction, 85% of on-line students feel they have more access to their instructors in distance learning courses than in conventional classroom courses.

(See also **COMPUTERS**; **CORRESPONDENCE COURSE**; **INTERNET**; **ONLINE EDUCATION**.)

DISTAR See **DIRECT INSTRUCTIONAL SYSTEM FOR TEACHING ARITHMETIC AND READING**.

distractors The incorrect answers in a multiple-choice test item.

distributive education A vocational education program for retailing, started in the late 1930s with government grants for training teachers to instruct skills needed in distribution (now called marketing) of retail goods. The program was the first to use COOPERATIVE VOCATIONAL EDUCATION, whereby local retail establishments cooperated with nearby schools to give students a combination of classroom instruction and on-the-job training.

District of Columbia A federal district created by an act of Congress in 1790–91, which includes the city of Washington, the national capital. Nearly 60% of its population of more than 550,000 is black. Although an elected mayor, city council and board of education exercise some degree of home rule, Congress has the right to veto any legislation and review the city budget. Because the city cannot collect property taxes from the federal lands and buildings that cover the city, Congress must appropriate an annual sum to supplement the city's revenues. The result of the arrangement has been a disaster for Washington public schools, which rank among the worst in the United States academically, with a high school dropout rate that reached about 40% in the early 1990s. The district established its first public schools for white children in 1804 and for black children in 1862. Schools were desegregated in 1954, but severe educational retardation and poor standardized test scores among black children led to establishment of a TRACKING system the following year. Tracking virtually resegregated students by race and provoked a suit, *Hobson v. Hansen*, and a 1967 ruling that "... ability grouping as presently practiced in the District of Columbia school system is a denial of equal opportunity to the poor and a majority of the Negroes attending school in the nation's capital. . . ." The court ordered tracking ended. In 1971, the plaintiffs in *Hobson* returned to court charging discrimination in

the application of school funds, and the court ruled that per-pupil expenditures in any school should not deviate from the citywide mean by more than 5%. In subsequent lawsuits by other plaintiffs, the recalcitrant school board was forced by various courts to provide special education facilities for handicapped children, disruptive children, to provide free education for all children, to refrain from summary expulsions and to cease violating the civil rights of individual children. The District has about 200 public schools with more than 75,000 students, 96% of them minority children and more than 24% of them living in poverty. Academic quality is the lowest in the nation. Only about 12% of students are proficient in reading and fewer than 10% are proficient in math.

Washington has two public four-year colleges, one of them the University of the District of Columbia, a LAND-GRANT COLLEGE founded in 1975. Two of the 13 private universities, however, are largely funded by the federal government—HOWARD UNIVERSITY, a predominantly black university founded in 1867, and GALLAUDET COLLEGE, a school for the hearing impaired, founded in 1856. The other private four-year colleges include Georgetown, George Washington and American universities and CATHOLIC UNIVERSITY OF AMERICA. Graduation rates at the four-year colleges average a remarkable 68.3%. There are no two-year institutions, private or public. District of Columbia high school graduates are eligible for special federal grants of up to \$10,000 to pay the difference between costs of tuition at D.C. colleges and the costs at public colleges in Virginia and Maryland. They are also eligible for up to \$2,500 in federal grants to attend private colleges in the District and adjoining counties in Maryland and Virginia.

divinity school A college that prepares students for ordination into the clergy. Often called seminaries or theological institutes, divinity schools are usually graduate-level insti-

tutions, although some Catholic seminaries permit students to enroll directly after graduation from high school.

(See also THEOLOGY.)

Dock, Christopher (1698–1771) German-born, Mennonite schoolmaster in Pennsylvania and author of the first book used for teaching in the American colonies. Written in German in 1770, *Schul-Ordnung* was translated into two smaller volumes, *A Hundred Necessary Rules for Children* and *A Hundred Christian Rules for Children*. They became the most widely used guides for teachers and parents of the era.

Dock immigrated to the colonies in 1714 and, four years later, opened a school for Mennonite children in Skippack, Pennsylvania. The author of many Mennonite hymns, Dock was an innovative teacher, who made singing an integral part of the school day and introduced a monitorial system, under which older students helped tutor younger children. Dock also was gentler than other schoolmasters of his day, abandoning the rod and rewarding good work. “[E]xperience teaches,” he wrote, “that a timid child is harmed rather than benefited by harsh words or much application of the rod. . . . Likewise a stupid child is only harmed. . . . If children are to be helped, it must happen through other means. . . .”

doctorate The highest academic degree, usually requiring BACHELOR’S and MASTER’S DEGREES followed by completion of at least two or more years of academic courses, the writing of a scholarly DISSERTATION based on original research, and the demonstration of complete mastery of a particular subject area by oral and written examination. Doctorate entitles bearers to be addressed as “Doctor” and to append their names with the appropriate letters of their degrees—that is, Ph.D. (doctor of philosophy) or M.D. (doctor of medicine). Two types of doctorates are awarded in the United States, research and professional,

with the latter seldom requiring a master’s degree or a dissertation. A professional doctoral degree in the United States, unlike Europe, only reflects academic attainment, and doctors of medicine (M.D.) or jurisprudence (J.D.) must pass state or national qualifying examinations to obtain licenses to practice. (In Europe, where governments control universities, a doctoral degree entitles its recipient to practice medicine, law and other professions.) The research doctorate, or Ph.D., originally awarded for study of philosophy, was in the mid to late 20th century extended to include virtually all areas of the humanities and sciences, with each Ph.D. simply modified to indicate the field of study—for example, Ph.D. Eng. (ineering), Ph.D. Hist. (ory), or Ph.D. Chem. (istry). All require successful completion of an original research project and a thesis thereon. More recently, as the study of many subject areas has become more specialized, doctoral degrees have assumed the name of those specialties, as in doctor of education (D.Ed.), doctor of musical arts (D.D.M.A.), doctor of business administration (D.B.A.), etc.

The number of doctorates awarded by American universities has increased by an average of about 3.5% a year, and 42,155 were granted in 2004—31.1% to non-U.S. citizens. Nearly 21%, 8,819, were awarded in the life sciences, 16.1% (6,795) in the social sciences, 15.7% in education, 14.4% (6,049) in the physical sciences, 13.7% (5,776) in engineering, 13% (5,467) in the humanities, 3.2% in professional fields and 3% in business. Men earned 54.5% of the doctorates awarded, and more than 41% of degree recipients intended to enter teaching, while 31.2% intended to go into research and development. Of the 62.7% of degree recipients who were U.S. citizens, 80.4% were white, 6.6% black, 4.9% Asian, 4.6% Hispanic and 0.5% American Indian or Alaskan native. The remaining doctorates, a startlingly high 37.3%, went either to resident aliens

(3.6%), to nonresident aliens (27.5%) or students whose citizenship was unknown (6.2%).

Dodge, Grace Hoadley (1856–1914)

American philanthropist who founded manual training programs for working girls and boys during the era of child labor and eventually expanded it to include a teacher training school that later became Teachers College at COLUMBIA University. Born to the wealthy and distinguished New York family that founded Phelps, Dodge & Co., she spurned the life of a debutante in favor of religiously inspired charitable work. While teaching Sunday school at the CHILDREN'S AID SOCIETY, she developed a discussion group for factory girls and began teaching them household skills. In 1880, she formalized her activities into the Kitchen Garden Association, which she expanded into the Industrial Education Association (IEA) four years later and broadened it to include manual training for boys. In 1887, Dodge expanded IEA to include a training school for teachers for her growing number of students, and she appointed a young Columbia professor, NICHOLAS MURRAY BUTLER, its director. In 1889, IEA was reorganized into the New York College for Training of Teachers, which, in 1889, was incorporated into Columbia University as Teachers College.

One of the first two women appointed to the New York City Board of Education (1886), Dodge helped found the New York Girls' Public School Athletic League (1906) and, as president of the YOUNG WOMEN'S CHRISTIAN ASSOCIATION of the United States, helped reorganize what was then a splintered organization into the unified association it remains today.

domain In education, a category of either intellectual functioning or curricular content. There are three domains of intellectual functioning: AFFECTIVE, COGNITIVE and psychomotor. In the area of curricular classification, domain refers to

a well-defined set of tasks that constitute the range of expected abilities for a particular subject. Thus, the domain of third grade mathematics would include the range of mathematical skills that a third grade student should be able to perform at the end of the year. Tests that measure such skills are often referred to as domain-referenced (or criterion-referenced) tests.

dormitory A residence hall for students, usually a multistoried facility, with individual rooms or suites (housing one or more students each), opening onto long corridors, with several common bathrooms. Derived from the Latin word *dormitorium*, "large room for sleeping," dormitories may or may not have common rooms, a common dining facility or common study facilities, depending on the layout of the particular school or college. Segregated by gender until the 1960s, college dormitories and many dormitory rooms are now often coeducational and may or may not be staffed by supervising faculty or older students and counselors. In one instance, three institutions joined together to build a single \$150-million "megadorm" to house their students. Called University Center, the new facility is essentially a standard apartment building in downtown Chicago. University of Chicago and DePaul each own 40% of the dorm, or 700 beds, and Roosevelt University owns the remaining 300 beds. Made up of apartments and suites, the facility plans to rent unused beds to students at nearby Illinois Institute of Art, the City Colleges of Chicago, and Harrington Institute of Interior Design, which are within a 12-block radius.

Dormitory residence is usually required at most boarding schools and at military colleges. It is optional at most other colleges and at universities, which charge dormitory fees over and above the costs of attending classes. About 2 million, or nearly 12%, of America's nearly 17 million college students live in dormitories.

Dormitories date back to the earliest European universities of the 12th century, when boys as young as 14 flocked to cities such as Paris to attend lectures. The early universities, however, provided no housing or maintenance, and the boys themselves congregated in rented quarters called *hospitia* (hostels). By the end of the 12th century, many instructors began operating such *hospitia*, endowing some to provide free lodging for the poorest scholars in exchange for work and other services. Endowed *hospitia* whose rooms were reserved exclusively for scholarly colleagues were called *collegia*, or "societies," thus giving rise to the word *college* for institutions of higher learning.

double sessions An extension of the school day that enables a school to accommodate a student body that exceeds school classroom capacity. Double sessions allow a school whose normal school hours run six hours, from, say, 8:30 A.M. to 2:30 P.M., to extend its day to a total of nine hours, from 8 A.M. to 5 P.M. It then schedules classes for half the student body from 8 to 12:30 and the other half from 12:30 to 5. Although double sessions deprive all students of a full day of classes, they represent an accommodation for communities that either do not have or refuse to spend funds for full-time schooling. Double sessions are most commonly used to accommodate kindergartens, whose education is often perceived by the public as less essential than the other elementary grades. Double session kindergartens allow schools to accommodate two groups of kindergartens in a single classroom (one in the morning, the other in the afternoon), thus freeing one former kindergarten classroom for use by older children.

dramatic arts The study and presentation of scripted plays, including acting and stagecraft. An integral part of the curriculum at many academically superior elementary schools, the

dramatic arts are generally relegated to the status of an extracurricular activity in most public schools, except specialized "magnet" high schools (see **MAGNET SCHOOLS**) for the performing arts. At the elementary school level, dramatic arts can be an important pedagogical vehicle for improving children's social, motor and language skills and encouraging creativity.

Dramatic arts at the college and graduate school level are offered as both an extracurricular activity and a formal academic offering leading to bachelor's, master's and doctoral degrees.

"dream" schools A colloquialism of college applicants that refers to those colleges they would most like to attend but whose standards for admission are higher than the students' own achievement levels often called "reach" schools.

dress code Rules and regulations governing student, faculty and staff clothing, personal appearance and grooming, including makeup, hair length and facial hair. With the exception of military schools, most American colleges and universities abandoned dress codes in the late 1960s and early 1970s when Americans generally became more tolerant of nontraditional and informal dress and hair styles, and when the age of majority was lowered from 21 to 18. Many elementary and secondary schools, however, continue to dictate student and teacher dress and grooming styles on the grounds that nontraditional, attention-getting dress or hair styles can prove disruptive in school settings.

Because of their status as private institutions, private schools have had relatively little difficulty imposing dress codes, including dresses for girls and ties, slacks and jackets for boys, with hair trimmed above the collar line. Many schools often ban jeans and sneakers as well. Some public schools, however, have

encountered legal opposition to dress codes from parents, who have challenged the right of a school to impose regulations that raise parental costs for nonschool purposes and infringe on various constitutional rights of children. The courts have been of little help in resolving such challenges. While courts in some states have ruled squarely in favor of school rights to set standards of dress and behavior, others have ruled in favor of students, contending that dress codes violate First Amendment rights of free expression; others have ruled that such codes violate Fourteenth Amendment rights to due process and equal protection under the law. The U.S. Supreme Court has traditionally refused to review any cases relating to the dress-code issue.

drill A learning technique based on constant repetition of the same task until the student has learned it to perfection, without hesitation. Drill generally proves effective in learning spelling, arithmetic and other basic academic skills, as well as in music, drama and artistic skills.

driver education Instruction in the techniques of driving automobiles and the study of traffic rules, regulations and safety. Although available at private, for-profit driver education "schools," most driver education is offered free of charge as an optional course in secondary school for youngsters who have reached the legal driving age in their communities. High school driver education consists of two parts: classroom instruction, often involving simulated driving machines, and on-the-road practice driving in a car. In addition to the schools themselves, insurance organizations, safety councils, car dealer associations and state agencies concerned with traffic safety often contribute to the funding of driver education in secondary schools. As an incentive to take driver education, many insurance companies

offer reduced premiums to drivers who successfully complete such training.

drop-add A college-level, curriculum-alteration policy that defines the procedures and, if appropriate, penalties for dropping or adding courses. Depending on the particular college, students may use so-called drop-add forms to drop or add a course within a specified period after enrollment without paying a penalty or obtaining an "incomplete" on their transcripts.

dropouts Students who withdraw from school or college without completing graduation requirements for reasons other than enrolling in another school or college. More than 10% of American high school students and one-half of all college students drop out every year. Two-thirds of all high school dropouts come from the low-ability, GENERAL EDUCATION track. "Not interested in school," is the most frequently reason cited by students for dropping out. Nearly 43% of those who dropped out from the tenth to twelfth grades said they did not like school, and 38% said they left because they were failing. Nearly 27% of all female dropouts cited pregnancy as the reason; this figure climbed to 34% among black females and 31% among Hispanics but was only 26% among whites. Less than 8% of male dropouts said they left school because they became fathers. Marriage was cited as a reason for dropping out by 15% of white students and 13% of Hispanic students but only 2% of black students.

Drop-out statistics are notoriously inaccurate, however, collected as they are by individual states, whose federal education grants are dependent on the success of their public school systems. Figures compiled from each of the states show the national drop-out rate having peaked at 14.6% in the 1970s and then slipping to 11% in 1992, when about 380,000 students dropped out of high school. In the ensuing years, however, the official

rates remained relatively intractable, with about 400,000 high school students, or 10.7% of total enrollment, dropping out in 2005, according to reports from each of the states. But Texas and Florida fail to count students who drop out, if they say they intend to earn high school equivalency diplomas or to continue their education in adult education courses. Florida nonetheless had the highest drop-out rate in the nation, 44%, followed by Georgia and South Carolina, with rates of 43%. Texas reported a drop-out rate of only 6.2%, but the true figure is estimated to be closer to 36%.

Drop-out rates among Hispanics have long been the highest, ranging, by all counts, between 30% and 35% during the 1970s, 1980s and 1990s and only easing to 27% in 2001. In the meantime, official black drop-out rates dropped from a peak of about 23% to only 10.9% during that time, while drop-out rates of white children fell from a peak of more than 15% to only 7.3%. Drop-out rates present semantic as well as statistical problems, however, because many students who do not physically leave school nonetheless fail to graduate but are nonetheless retained on class rolls, thus minimizing the statistical effect of dropouts. The Manhattan Institute, a policy research group, prefers using the GRADUATION RATE. The institute's studies of state-by-state graduation rates found that only 72% of the nation's female high-school seniors and 65% of males graduated with diplomas in 2003. Only 59% of African-American girls and 48% of African-American boys graduated in 2003, while graduation rates for Hispanics were 58% for girls and 49% for boys—all far higher failure rates than the pure drop-out rates.

Regardless of which statistics are used, the economic consequences of dropping out (or not graduating) were startling. Nearly 30% of all high school dropouts experience periodic unemployment, although long-term unem-

ployment rates during the prosperous years since 2000 hovered between 7% and 10%. The median annual income of those who find work is about \$25,000 for men and \$20,000 for women, compared with about \$35,000 and \$25,000, respectively, for men and women with a high school diploma or equivalent. For the nation as a whole, the cost of the more than 500,000 high school dropouts is nearly \$200 billion a year in economic losses, according to economists. A high school dropout earns about \$200,000 less over a lifetime than a high school graduate, thus depriving federal, state and local governments of about \$60,000 in taxes, or \$50 billion a year for all 23 million of the nation's high school dropouts between the ages of 18 and 67, the average retirement age. Those consequences are not irreversible, however. Every state offers a High School Equivalency Testing Program, or GENERAL EDUCATIONAL DEVELOPMENT (GED) for adults who have not completed a formal high school program. After completing appropriate adult education or home-study courses and obtaining a passing score in each of five tests, the student receives a high school diploma that serves as a valid "equivalent" to a conventional diploma as a qualification for thousands of jobs and for admission to many two-year and four-year colleges. Also ameliorating the impact of dropping out in some communities is the growing willingness of colleges to accept students without high school diplomas. Indeed, many such colleges have established special academic programs for high school dropouts that automatically grant students a high school diploma along with their associates degrees when they complete two years of combined college/high school courses. By 2008, nearly 400,000 students without high school diplomas were enrolled in college, accounting for 2% of all college students, 3% of community college students and 4% of commercial college students. As many as one-third of the students at some

two- and four-year colleges had no high school diplomas.

Many educators trace the drop-out phenomenon to poor reading skills. Indeed, studies show that students beginning high school with low reading proficiency are 20 times more likely to drop out than classmates with average or superior reading skills. As a result, a growing number of schools across America are setting up programs to target middle schoolers—especially those overage for their grades—and group them together with students their own age in classes designed to improve their reading skills. By “reconnecting” them with their age-mates, the programs remove the stigma of sitting in a class with and often performing more poorly than younger students. Once regrouped into a class of their age mates, the students begin an accelerated curriculum that combines classroom work, with no more than 15 students in a class, and after-school tutoring (and emotional support) to help them catch up and eventually finish school. By 2005, drop-out prevention programs were in place in middle schools and high schools in Cincinnati, Cleveland, Dallas, New York and Philadelphia. Cleveland’s pioneering Options Complex worked with 175 overage students in three schools; Philadelphia opened three high schools for overage students; and Cincinnati’s nine-year-old program for overage middle schoolers boasts three classes of 15 to 18 students each, in which 95% complete an accelerated program that allows them to enter high school with students their own age.

The COLLEGE drop-out phenomenon differs substantially from that of the high school, given the entirely voluntary nature of college attendance and the adult status of college students. About 45% of college students drop out of four-year colleges without completing the work required for their degree. Unlike the student abandoning high school, the college drop-out is not precluded from re-enrolling at a later

date—often years later—and finishing his or her work, but the economic consequences of dropping out of college are often as dramatic as those for high school dropouts. The median income of college graduates 25 years or older was about \$56,000 for men and \$41,000 for women in 2001, compared with median incomes of \$41,000 and \$30,400, respectively, for men and women who left college without completing their degree requirements.

One common aspect of the high school and college drop-out phenomena is the failure of the American education system to provide adequate VOCATIONAL EDUCATION for either secondary school students or high school graduates—a lack that forces millions of American youngsters to pursue studies in the sciences, humanities or business for which they have no aptitude. There are other factors driving the college drop-out phenomenon, however, the most far-reaching being the cultural and economic background of students. Lower-income students come from families of poorer educational and cultural backgrounds than upper-income students do, and high schools in low-income areas fail to prepare students for college as thoroughly as high schools in upper-income areas. Indeed, the National Center for Public Policy and Higher Education found entering freshmen at 17 state university systems unprepared for college-level work. A study commissioned by the BILL AND MELINDA GATES FOUNDATION found that 60% of white high school graduates, 78% of black high school graduates and 80% of Hispanic high school graduates were unprepared for college. Even worse, the National Center found 46 of America’s 50 state universities unaffordable for *average* American students and their family, let alone the economically disadvantaged. The result is that 40% of incoming freshmen at the 42 most selective universities in 2004 came from families making more than \$100,000 a year, compared

with 32% five years earlier, though fewer than 20% of American families earned \$100,000 or more. And freshmen from the wealthiest 25% of American families, filled 55% of the seats in the 250 most selective colleges, both public and private. At some state universities, students from families in the bottom half of the income distribution spectrum make up less than 10% of undergraduates.

drug abuse The voluntary use by mouth, injection or inhalation of any substance not prescribed by a licensed physician that may affect an individual's normal physical, intellectual, psychological, social or emotional functions. Drug abuse spans the range of addictive and nonaddictive chemical substances, both legal and illegal, and may include tobacco, inhalants, alcoholic beverages, diet and cold pills, and illegal narcotics, stimulants, steroids and hallucinogens. Tobacco use is cited as the fifth most frequent disciplinary problem faced by elementary and secondary public school teachers, followed by alcohol abuse, vandalism to school property and abuse of drugs other than tobacco and alcohol.

All forms of high-risk behavior by elementary and high school students showed a steep decline during the last few years of the 20th century—a reflection, in part perhaps, of the economic boom of that period, but also the likely result of stepped-up intervention programs and compensatory health and behavior education in schools. In 1994, Congress passed the SAFE SCHOOLS ACT, which forced public schools to expel students found carrying drugs or weapons. Subsequently, drug use among 12- to 17-year-olds fell from a peak of 13.2% in 1985 to about 9% in 1996, while alcohol consumption, which had climbed 30% during the previous 30 years, plunged from 41.2% to 18.8%. Marijuana use dropped from 10.2% to 7.1% and cocaine use fell from 1.5% to 0.6%. Cigarette consumption dropped from 29.4% to 18.3%.

drug abuse education Any of a variety of programs designed to teach students of all ages about the dangers of drug abuse. Although drug abuse education in the most general sense can include therapy for abusers, in the field of education it is limited to that area of the HEALTH EDUCATION curriculum dealing with the physical, intellectual, psychological, social and emotional consequences of drug abuse. In elementary and secondary schools, drug abuse education is integrated into standard health education courses, with the depth of discussion varying according to age. Drug education, like SEX EDUCATION, however, remains a center of controversy in many communities that fear that such instruction may stimulate rather than discourage experimentation. Moreover, there is no consensus among educators on the most effective approaches to drug education. Some programs such as DARE (Drug Abuse Resistance Education) try to frighten children with graphic videotapes and presentations by police officers and former addicts. Founded in the early 1980s, DARE presentations became part of school curricula in 10,000 public school districts in the United States and in schools in 54 other nations. Many health experts and educators oppose DARE-type programs, which focus on the consequences of drug use—the criminal penalties and the physical effects. Drug abuse, say DARE opponents, is purely a health issue requiring a scientific, objective approach to educate children properly. Although there is no clear evidence that any specific program has helped curtail drug abuse, some educators believe any drug abuse education is better than none, and there is little question that student drug abuse has declined sharply from the peak reached in the late 1970s before drug education became a standard part of the health education curriculum.

The Drug Abuse Council lists seven essential goals for elementary and secondary school

programs: to increase student knowledge about drugs; change student attitudes about consuming drugs; change the behavior of drug abusers; increase student participation in alternative activities; help students develop sets of personal values; improve student decision-making skills; and improve student self-esteem.

dry-erase board A porcelain-coated steel panel, usually 42 to 48 inches high and of variable lengths, that permits teachers (and students) to write key learning materials with ordinary felt-tipped marker pens for viewing by an entire class. Often as long as the classroom wall itself, dry-erase boards began replacing once-ubiquitous green and black slate CHALKBOARDS in the 1980s and 1990s. Often called market boards, the dry-erase boards are easy to clean with any soft cloth, and they eliminate the problem of chalk dust—often a serious health problem for students allergic to chalk dust and an equally serious problem for classroom computers if the dust invades the inner workings. Dry-erase boards accept markers in a range of colors that increase the instructor’s ability to categorize or emphasize different materials.

(See also ELECTRIC CHALKBOARD; WHITEBOARD.)

DuBois, W. E. B. (1868–1963) African-American educator, sociologist, author, social reformer and the first African American to demand equal educational equality for American blacks. To that end, DuBois was a cofounder of the National Association for the Advancement of Colored People, which was instrumental in ending racial segregation in American public schools.

Of African, Dutch and French ancestry, DuBois was born to an old, propertied, New England family, in the small farming community of Great Barrington, Massachusetts. His grandfather had fought in the Revolutionary War and his father in the Civil War. An aca-



W. E. B. DuBois (*Atlanta University Archives*)

ademic prodigy, he mingled freely with his white classmates, who paid little attention to his light, tan skin. After he graduated from high school at the head of his class at 16, however, his teachers discouraged him from applying to Harvard because of his race, and he enrolled at Fisk University, an all-black college in Nashville, Tennessee, where for the first time in his life, he found himself in an all-black community, surrounded by hostile whites. The shock changed his life. “No one,” he wrote, “but a Negro going into the South without previous experience of color caste can have any conception of its barbarism.”

The following summer, DuBois went into the backwoods of Tennessee to teach in local schools. There, he saw a level of poverty and ignorance that stoked his anger for the rest of his life. Returning to Fisk, he founded the school newspaper, *The Fisk Herald*, and wrote “An Open Letter to the Southern People,” which warned of racial conflicts to come if the

South did not grant African Americans equal opportunities. It was the first of what would be a lifetime of protests. DuBois graduated from Fisk in three years and earned a scholarship to Harvard, where he graduated cum laude with a second B.A. in 1890. He went on to earn his M.A. and Ph.D., for which he produced a thesis on slave trade laws, which was published by the American Historical Society. DuBois was elected its first black member. He then enrolled in Berlin University for two years, where his studies of socialism convinced him that black equality in the United States would be impossible while whites controlled industry. He linked the struggle for black equality in America with the black African struggle for independence from European colonial powers. At 25, he returned to the United States to teach and lead the struggle for African-American equality.

After two years at Wilberforce College in Ohio, he was appointed the first African-American sociologist in the United States by the University of Pennsylvania, in Philadelphia, where he published *The Philadelphia Negro*. His work was acclaimed as the first study to prove that history and environment, not genetics, were responsible for African-American poverty in the North. In 1897, ATLANTA UNIVERSITY, then a small African-American college in Georgia, invited DuBois to head its sociology department and serve as professor of economics, history and political science. While there, he produced an ongoing study of African Americans that eventually grew into an encyclopedia of black life in the United States. His work earned worldwide attention, and in 1900, a grand prize and gold medal at the World's Fair in Paris, France. The studies embarrassed the United States and the South, however, and the Southern Education Board, which funded black colleges, cut off Atlanta University's funding until DuBois agreed to abandon his work.

Infuriated, DuBois called for a nationwide black protest. He urged blacks to boycott all white businesses and to organize themselves into economic cooperatives. In 1903, he wrote his most successful and most widely read book, *The Souls of Black Folk*, in which he attacked BOOKER T. WASHINGTON's philosophy of "accommodation" with whites. For several decades, Washington had advocated massive programs of vocational education to teach blacks the skills and trades most needed by white employers. DuBois argued that Washington's approach would make African Americans as dependent on whites as they had been during slavery. DuBois demanded nothing less than equal educational opportunity, whereby blacks could obtain the same broad scientific and liberal arts education as whites through equal access to primary and secondary schools and colleges and universities. Less than that, he said, would condemn African Americans to perpetual serfdom.

In 1905, DuBois organized the "Niagara Movement" at a Niagara Falls conference of 29 African-American leaders, who, with DuBois, repudiated Washington's policy of "accommodation" and demanded complete political, educational and social equality for African Americans. After several years of race riots in the South and Midwest raised fears of a new civil war, a group of social leaders of both races met in New York in 1909 to replace the Niagara Movement with the new, interracial National Negro Committee, whose goal was racial peace and justice. In 1910, they changed the name to the National Association for the Advancement of Colored People (NAACP) and named DuBois director of publications and research to write all the organization's pamphlets and magazines.

In 1910, he left Atlanta University to found *The Crisis* magazine, the official publication of the NAACP. He built the circulation of *The Crisis* to more than 100,000 readers

and made it the most influential journal of protest in the United States. *The Crisis* urged African Americans across the United States to abandon Booker T. Washington's policy of "accommodation" in favor of a new protest movement. "If we are to die," DuBois wrote, "in God's name let us perish like men and not like bales of hay." In 1915, Washington died, and, with him, his policy of accommodation. DuBois emerged as the nation's most influential black leader, demanding nothing less than equal education, equal justice and equal rights for African Americans. His magazine was one of the few publications in the United States to report on the thousands of lynchings and other atrocities committed against African Americans. DuBois also reported on the achievements of African Americans, who were largely ignored by the white-owned press. He wrote on African cultures and encouraged African-American authors to submit poetry, fiction and nonfiction articles, thus spawning the so-called Harlem Renaissance of black writers. *The Crisis* encouraged young African Americans to pursue higher education, and he called on the African-American community to support Negro colleges.

The protest movement, however, brought DuBois nothing but bitter disappointment for almost the rest of his life. In 1916, the federal government rebuffed his efforts to allow African Americans to enlist in the Army. Later, more than 80,000 African Americans were drafted into the Army, only to be segregated into separate units from whites. In 1919, when race riots erupted in Illinois, Nebraska, Texas, Arkansas and Washington, D.C., DuBois demanded, in vain, "to have the Constitution of the United States thoroughly and completely enforced."

World War I not only failed to win freedom for blacks in the United States, it failed to win freedom for Africans from European colonial powers in Africa, and in 1919, with the

support of the NAACP, DuBois organized the first Pan-African Congress in Paris, where for the first time African Americans discussed mutual problems with Africans and West Indians. While Africans and West Indians demanded self-rule from European colonial powers, DuBois and the NAACP demanded nothing less than full integration of African Americans into white society.

In 1936, discouraged by the effects of the Depression on African Americans, DuBois left the NAACP and returned to Atlanta University, determined to build black higher education as a vehicle for African Americans to achieve equality. Although he convinced the presidents of 20 African-American colleges to cease competing with each other and cooperate, his voice in national affairs began to fade without *The Crisis* as a medium, and he never again wielded the same influence as a leader of his race.

After more than one million African-American servicemen were forced to serve in segregated units during World War II and after their service failed to earn them new freedom in the United States, DuBois once again raised his voice in protest. At 75, he left Atlanta University in 1944 and rejoined the NAACP. He traveled widely, lecturing, writing articles and stirring African Americans everywhere to protest white injustice, even appealing to the United Nations "to take cognizance of a situation which deprives [millions of African Americans] of their rights as men and citizens. . . ."

Embarrassed by his constant harangues, the federal government arrested him in 1951, accusing him of being an agent of the Soviet Union. He was tried and acquitted, but the government responded by stripping him of his passport and right to travel and voice his views overseas. In 1954, however, his words echoed through the U.S. Supreme Court, which struck down racial segregation of American public

schools in *BROWN v. BOARD OF EDUCATION OF TOPEKA*, the landmark case brought by the NAACP that he had helped found. After the government indicted him as an enemy agent in 1961, DuBois and his wife fled the United States for good, accepting an invitation from Ghanaian president Kwame Nkrumah “to come home” to his forebears in Africa, where he directed the publication of the *Encyclopedia Africana*.

Scorned by white Americans, he was honored by Africans everywhere; he became a Ghanaian citizen in 1963. He died in Accra on August 27, 1963, and was buried on the same day that more than one-half million black and white Americans were assembling for the March on Washington, best remembered for the Rev. Martin Luther King, Jr.’s demand for racial equality in his famous “I Have a Dream” speech. Before the march began, the throng bowed their heads in remembrance of DuBois, whom the NAACP later eulogized this way: “He created what never existed before—a Negro intelligentsia. . . .” His most important books include *The Souls of Black Folk* (1903), *The Negro* (1915), *Black Reconstruction* (1935), *Dusk of Dawn* (1940), *Color and Democracy* (1945), *Encyclopedia of the Negro* (ed., 1933–45) and *Autobiography of W. E. B. DuBois* (posthumous, 1968).

dunce A dull-witted, stupid, incompetent or unmotivated student, whom American teachers routinely punished by ordering the child to sit on an elevated stool, in and facing the front corner of classroom, in full view of other students, with a conical “dunce cap” atop his head. The term is derived from the middle name of John Duns Scotus, the 13th-century Scottish theologian who founded the scholastic system called Scotism, which held theology and philosophy to be intertwined and that truth lay in a combination of philosophy and divine revelation. For centuries

after his death, Scotists, or “Dunses,” constantly debated followers of St. Thomas Aquinas, or Thomists, who ridiculed their challengers as sophists and pedants, for which the title dunce became synonymous. The dunce cap, or clown’s hat for children who misbehave in class, appears to have originated in the early 1800s.

Dunster, Henry (1609–1659) English-born clergyman and teacher and, in effect, the founding president of HARVARD COLLEGE. Although Harvard opened in 1636, its first “president,” the ne’er-do-well NATHANIEL EATON, left the school without funds, faculty or students, and it was closed after one year of his tenure. It reopened in 1640 under Dunster, a graduate of Magdalene College, Cambridge University. He immediately organized Harvard along the lines of English colleges—a form it would retain over the next two centuries. By the time he resigned 14 years later, Harvard could boast of 74 eminent alumni, a library of more than 1,000 volumes, three buildings and a president’s house that Dunster himself had built and which housed a printing press. Although he contributed a tract of land and often donated his small salary to save the college from bankruptcy, he was nevertheless forced to resign when he converted to Baptism in 1654. Espousing the Baptist principle of postponing baptism until a child reached adulthood, he was tried and convicted for refusing to have his infant child baptized. He spent the remainder of his life in Scituate, Massachusetts, where he served as a minister and tried without success to recover the back salary that Harvard owed him.

Dutch Reformed Church The established church of New Netherland, when the Dutch ruled present-day New York, from 1625 to 1664. A derivative of CALVINISM, the church was instrumental in helping establish the first

schools in New York and supervising the licensing of the first teachers. The Dutch first landed in the New World in 1609 when English navigator Henry Hudson led a Dutch expedition that planted the Dutch flag on Manhattan Island and other points northward along what was later named the Hudson River. The first colonists did not arrive until 1614, when the Dutch West India Company dropped off small groups of mostly French-speaking Belgian families, or Walloons, at various points along the coastline of the new province. In 1628, Domine Jonas J. Michaelius arrived to assume the ministry of the Dutch Reformed Church and instruct the young. In 1638, the Dutch West India Company sent schoolmaster Adam Roelantsen to New Amsterdam to open what some maintain is the oldest continually operating school in the New World, the ancestor institution of today's COLLEGIATE SCHOOL.

Despite the advent of British rule in 1664, Dutch colonists were given full freedom of movement and the right to own property, and they spread across the farmlands of southern New York, eastern New Jersey and eastern Pennsylvania, taking their church with them. By the early 1700s, the spirit of revivalism affecting other Protestant sects in North America gripped the Dutch Reformed Church, which not only proselytized whites, but sought converts among Indians.

Like other Protestant sects, the church split between "Old Light" conservatives and "New Light" liberals who sought to adapt church rituals to the practical needs of life in the New World. Fearing that Dutch pastors would join with Anglicans in establishing King's College (later, COLUMBIA COLLEGE) and possibly unite the two religions, Reverend Theodore Frelinghuysen sought to open a traditional Dutch Reformed college to train young ministers. A conference of other ministers and elders in 1755, however, led to the opening of Queen's

College (later, Rutgers College), a more secular institution than Frelinghuysen had sought, in New Brunswick, New Jersey. The Queens charter called for "the education of youth in the learned languages, liberal and useful arts and sciences, and especially in divinity; preparing them for the [Dutch Reformed] ministry, and other good offices."

Dwight, Timothy (1752–1817) American educator, author, religious leader, founder of coeducational schools in Massachusetts and Connecticut, and, from 1795 to 1817, the president of YALE COLLEGE. Born in Northampton, Massachusetts, Dwight was the grandson of New England theologian-educator JONATHAN EDWARDS. He graduated from Yale in 1769 and remained there as a tutor until 1777, when he resigned to become a chaplain in the Revolutionary Army. In 1779, he returned to Northampton, where he combined preaching in several churches with the founding and operation of a coeducational academy. In 1783, he became pastor of the Congregational Church of Greenfield Hill, Connecticut, where he remained 12 years and founded another coeducational academy. In 1795, he replaced EZRA STILES as president of Yale, where he spent the rest of his life, expanding the college from a relatively small theological institute into the nation's preeminent institution of higher learning. Under his leadership, Yale became the new standard for colleges founded elsewhere in the United States.

To attract more mature scholars, Dwight abolished outmoded forms of discipline and modernized the curriculum by establishing a professorship in chemistry, which he invited Benjamin Silliman to fill. Silliman, who fathered and nurtured American science education, collaborated with Dwight in founding the Yale Medical Institution (later the Yale Medical School) in 1813. Dwight was an active teacher at Yale, conducting classes in

rhetoric and metaphysics for seniors. A conservative Congregationalist, he frequently preached at Yale, where he was known as "Pope Dwight." In 1808, he helped found the ANDOVER (Massachusetts) THEOLOGICAL SEMINARY to train traditionalist Congregational ministers. Dwight's grandson, also named TIMOTHY DWIGHT, later became president of Yale as well.

Dwight, Timothy (1828–1916) American theologian, educator and, from 1886 to 1899, the innovative president of Yale University who transformed the then-small college into a major, world-renowned university. Grandson of the first TIMOTHY DWIGHT to be Yale president, Dwight was born in Norwich, Connecticut, and educated at the Hopkins



Timothy Dwight (*Library of Congress*)

Grammar School in New Haven, before getting his B.A. and M.A. degrees at Yale. He tutored at Yale while studying theology at Yale Divinity School from 1850 to 1853. He was ordained in 1861 and became professor of sacred literature at Yale Divinity School. Dwight promoted closer contacts between faculty and students and encouraged students to take more responsibility for their own education by introducing course electives. During the first year of his presidency, YALE COLLEGE was renamed Yale University, and Dwight henceforth presided over a vast expansion of Yale's physical plant.

dyscalculia An inability—often neurological in origins—to perform mathematical operations, including simple arithmetic such as addition, subtraction, multiplication and division and to apply arithmetic in everyday life. Children with dyscalculia cannot perform calculations mentally or memorize basic arithmetic facts such as the multiplication tables. They are also unable to master abstract areas of mathematics, such as algebra, plain and solid geometry, trigonometry and calculus, and they must use calculators to perform simple arithmetic needed for everyday life.

Common dyscalculia often has nothing to do with an inability to calculate, but rather with a reading impediment—DYSLEXIA—that prevents a child from seeing numbers clearly or in their correct order. A child not suffering from dyscalculia who sees 38 as 83 will automatically produce the wrong answer when adding it to or subtracting it from another number. Retraining directed at the reading impediment often solves the child's problem with arithmetic.

Nonneurological dyscalculia can result from inadequate infant education prior to preschool—i.e., a failure to expose the infant to concrete objects such as blocks to manipulate and a failure of parents to teach abstract

concepts using language-based facts such as *more than*, *less than*, and so on. Again, retraining, using blocks and other objects to teach such concepts as adding, taking away and "how many do we have left," can solve such nonneurological dyscalculia.

dysgraphia A learning disability of otherwise normal children characterized by an inability to write conventionally at the appropriate level for the child's age. Often the result of neurological damage, dysgraphia is characterized by letter reversals, incomplete letter formation, telescoping of letters and inability to write along a straight line, producing a wave-like appearance. Some or all symptoms of dysgraphia are common developmental problems for many preschoolers and kindergartners, but such symptoms normally disappear as they mature physically. For those whose symptoms persist, the word processor has proved the most effective method of overcoming the problem.

dyslexia A learning disability of otherwise normal children characterized by an inability to read, write and spell at an appropriate level at any given age. A broad "catchall" term, dyslexia is often misused to include a variety of unrelated learning disabilities. Indeed, dyslexia has developed so many connotations that it has lost much of its connotative specificity except as a broad reference to reading problems. The National Institute of Neurological Disorders and Stroke at the National Institutes of Health defines dyslexia as "a learning disability that alters the way the brain processes written material. The effects of the disorder vary from person to person . . . the only common trait among people with dyslexia is that they read at levels significantly lower than typical people of their age and intelligence."

The American Psychiatric Association's *Diagnostic and Statistical Manual of Mental Disorders* calls dyslexia a developmental reading disorder whose "essential feature . . . is marked impairment in the development of word recognition skills and reading comprehension that is not explainable by mental retardation or inadequate schooling and that is not due to a visual or hearing defect or a neurological disorder." The diagnosis is made only if this impairment significantly interferes with academic achievement or with activities of daily living that require reading skills. "Oral reading is characterized by omissions, distortions, and substitutions of words and by slow, halting reading. Reading comprehension is also affected."

Often found in concert with other LEARNING DISABILITIES, dyslexia cannot be treated medically, but various methods of sophisticated instruction and "retraining" can teach many dyslexics to overcome the most debilitating effects on their reading, writing and spelling skills. There is no correlation between dyslexia and intelligence. I.Q.'s among dyslexics range as widely as that of nondyslexics. Dyslexia affects an estimated 15% of American children, although the range of estimates vary from 2% to 20%. Rates of dyslexia vary from region to region in the United States and from country to country.

Brain imaging studies of dyslexic children have found anomalies in the middle upper portion, or temporoparietal region, of the left half of the brain—an area that converts blocks of sound, or phonemes, to written letters and decodes their connection. Although dyslexia can be a permanent neurological malformation, there is evidence that it is developmental in some children, and, indeed, may appear and disappear. For example, only one of six in a group of 400 Connecticut children who displayed symptoms of dyslexia in the first grade

continued to display those symptoms in the third grade, according to a nine-year study by pediatrician Sally E. Shaywitz, M.D., at the Yale University School of Medicine. The study also

found, however, that some children who showed no symptoms of dyslexia in first grade acquired them by the time they reached third grade.

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early action A COLLEGE ADMISSIONS procedure whereby a college notifies a limited number of applicants, in advance of most applicants, whether they have been admitted, been rejected or had their applications deferred for review at a later date. Used by a relatively small number of colleges, the early action procedure is similar to EARLY DECISION procedures in that it requires applicants to file two months earlier than conventional applicants—usually by November of their senior year of high school. In turn, the colleges notify applicants of their status by mid-December, as much as four months before the rest of the applicant pool. A student may only apply for early action to one college. All other college applications must be for regular-admission notification.

Unlike early decision procedures, students accepted under early action programs are under no obligation to attend the college that accepts them and need not notify the college of his or her intention until the following spring after receiving decisions from other colleges on conventional applications. The college's decision to accept or reject the applicant is binding, however. A decision to defer an early action application merely transfers the application into the general application pool for consideration with conventionally filed applications and notification the following spring.

early childhood education A broad reference to any and all formal and informal, non-familial, institutional education of children during their PRESCHOOL, prekindergarten years. The term is vague, however, and some psychologists extend the early childhood years through the first three grades of primary school.

early college A school-college partnership program that combines high school studies with college-level courses, allowing students to enroll as early as ninth grade (or earlier for the particularly gifted) and go on to earn both a high school diploma and an associate or bachelor's degree at graduation. Unlike other SCHOOL-COLLEGE PARTNERSHIP PROGRAMS, early-college high schools are separate and independent administrative entities that operate on college campuses and offer a full range of whatever high school academic courses their students need to complete their secondary school education. Many of the high school courses, however, are team-taught by college and high school faculty to ensure a smooth transition from secondary school to college academic levels. Although some early colleges are open to ninth graders—one even starts with middle school students—the majority admit only high school juniors and seniors to reduce costs by limiting the number of courses they offer. Usually studying at their own pace, students can graduate in less time than in conventional

schools. Depending on the particular school, students usually enroll in two college courses per semester their first year, three their second year and as many as four their third year. They attend classes with college students and use the same laboratories, libraries and other academic facilities, and they earn the same college credits, which they may apply toward their future degrees. All early colleges offer academic counseling, along with support classes and tutoring when needed. Although students forgo traditional extracurricular activities such as team sports and proms, they generally have near-perfect attendance and graduation rates. Students at some early colleges can play on school teams at the public schools they would normally attend.

Because of the heavy course load, few early college students graduate high school early, but they tend to complete the combined high school–college program and earn their bachelor's degrees in seven or even six years instead of the usual eight—thus reducing the costs of a college education and, in doing so, replicating the standard European model of education, which offers no equivalent of the American “college.” Instead, students complete the academic course work of four years of American high school and the first two years of American college during their secondary school years and proceed directly to university for concentrated work leading to a master's degree or doctorate in a particular subject—combining the work of the last two undergraduate years at American colleges (the so-called major) with the subsequent years of graduate school.

Often called middle colleges, some of the newer early colleges have shifted focus from gifted students to disadvantaged students, theorizing that the stimulus of more challenging academic work, combined with personalized counseling, may improve student performance and reduce high school drop-out rates. The BILL AND MELINDA GATES FOUNDATION invested \$110

million to create 42 schools serving about 17,000 students—many of them functioning below grade level. The theory guiding the investment was that a combination of personalized attention and challenging work would help students finish school with demonstrated proficiency in most academic areas and accumulate enough college credits for an associate degree. The Gates Foundation grant is expected to increase the number of early colleges to 170 or more by 2010. Guilford County, North Carolina, opened eight of what it calls “Early/Middle Colleges,” with 100 students in each, at eight nearby community and technical colleges and has cut the area's public school drop-out rate from 6% to just over 3%.

The early college concept began with the founding in 1966 of Simon's Rock College in Great Barrington, Massachusetts, by Elizabeth Blodgett Hall, the former headmistress of a private girl's school. Founded for and still devoted to gifted children, Simon's Rock is a part of Bard College in Annendale-on-Hudson, New York, where it allows young high school students to enroll after tenth or eleventh grade and progress academically at their own pace to earn associate and bachelor's degrees as soon as they master the work—no matter how young they are.

Whether the Simon's Rock concept is applicable to disadvantaged students remains under study. The hope is to develop a broad-based curriculum that can be transferred to conventional high schools to stimulate more minority students to finish their education. While 78% of white high school students graduated from American public high schools in 2005, only 56% of black students and 52% of Hispanic students received their diplomas, and only about 20% of black and Hispanic students who graduated were academically prepared for college, compared with 40% of white students. Minority students make up 80% to 95% of the enrollment in the early colleges devoted to the

disadvantaged, and many such schools are tuition-free CHARTER SCHOOLS that admit students no older than 15 who are entering ninth grade for the first time and read at least at the sixth-grade level.

(See also ACCELERATION; GIFTED; PROJECT ADVANCE; TRANSITION SCHOOLS.)

early decision A COLLEGE ADMISSIONS procedure whereby high school seniors file applications in advance of the conventional application pool and receive advance notice of the college's decision to accept or reject their application. A student may only apply to one college for early decision, and applications are usually due by November of the senior year of high school, instead of the usual January or February date for conventional applications. In turn, the college notifies the applicant of its decision by mid-December. If accepted, the student may be legally committed to attend the early-decision college the following autumn and may not apply to any other college. For students, early decision eliminates the chore and cost of filing a host of applications to other colleges, and it eliminates a winter's anxiety, waiting for the day in spring when colleges mail their acceptances to most applicants.

The early-decision application originated at academically selective private colleges in New England in the 1960s and 1970s and was designed to cut administrative costs and assure each college a core of highly motivated students in each incoming freshman class—often more than 50%—who made that college their first choice. Early-decision acceptances left colleges with fewer seats left to fill from the conventional applicant pool and allowed them to be more selective in choosing the rest of the incoming freshman class. Recognizing that some colleges actually lowered acceptance standards for early decision applicants, high school seniors flooded colleges with early-decision applications in the late 1980s and early

1990s. At some prestigious private schools, as many as 70% of the senior classes applied early decision, while 40% to 50% of public high school seniors followed suit. Rather than watch a handful of New England colleges siphon off the brightest students, private colleges—and even public colleges—across the nation set up their own early-decision programs. By 1998, more than 500 colleges offered some form of early decision, compared to only about 120 a decade earlier, and some less selective colleges established two early-decision programs: Early Decision I, with a November 1 application deadline, and Early Decision II, with a January 1 application deadline, that permitted students rejected by Early Decision I colleges to apply “early” to a second institution and still have an edge over those who applied in the general application pool later in the winter or early spring.

Over the years, however, early decision programs have all but locked out economically disadvantaged students from the applicant pool, because they would have to commit to a college long before they learn how much financial aid the college will offer them. Aid packages are usually not revealed until all applications have been received in mid-April. Students who apply for admission at that time receive proposed aid packages with their acceptances and are thus able to compare offering from various colleges before deciding which to attend. Because of their interest in expanding the percentage of students from lower economic groups, HARVARD, PRINCETON, and other academically selective colleges eliminated early decision programs in 2007, knowing they will still receive ten or more times the number of academically gifted applicants that they can accept. For second-tier colleges that fall in the “SAFETY-SCHOOL” category for many students, early decision will continue to be a primary method of attracting motivated students willing to make such schools their first choice.

(See also EARLY ACTION; ROLLING ADMISSIONS.)

early intervention Any remedial program aimed at preventing dysfunction, as opposed to remediation programs to correct dysfunction. A broad range of early intervention programs are available in education, of which Operation HEAD START may be the best known and most widely used. Developed in the mid-1960s, Head Start gives economically and culturally deprived preschoolers the education needed for them to begin school on an equal footing with children who have not suffered such deprivations. Early intervention at the preschool level tends to decrease grade retention rates and the need for remedial services in primary and secondary school, while increasing high school graduation rates.

In 2000, the U.S. Department of Education released the results of a 25-year study that showed early intervention among disruptive preschoolers can reduce the need for special education when they enter school. Called the Regional Intervention Program (RIP), the government-subsidized program followed 40 families whose preschoolers had displayed extreme behavior problems, such as outbursts, temper tantrums, screaming and crying. RIP taught parents to monitor their children's behavior, clarify their expectations for their children, give their children specific choices, reward good behavior and work closely and cooperatively with other child-care providers and teachers to teach their children self-control and ways to interact with others. Although the infants were not diagnosed for ATTENTION DEFICIT DISORDER or ATTENTION DEFICIT HYPERACTIVITY DISORDER, none developed either of these learning disabilities, and, indeed, after 25 years, all the children had completed high school, half had attended college and four were working on doctoral degrees. None had been placed in special education and only one had a juvenile justice offense—for smoking marijuana.

earth science The study of geology, oceanography, meteorology and other sciences dealing with the Earth and its parts. Coined in 1939, the term generally refers to broad-based primary and secondary school geology courses that are less specialized than college-level geology and include nongeological topics related to environmental science.

East India School An early, colonial "public free school" for settlers' children that was to have been built in Charles City, Virginia, in 1624. The school was proposed in 1621 by the Reverend Patrick Copland, chaplain of the *Royal James*, a ship in the East India Company fleet. Seeking to assure the propagation of the Anglican Church among the settlers, Copland raised 70 pounds aboard ship for the project. The Virginia Company, which ran the East India Company's plantations in Virginia, then granted 1,000 acres of land and sent a carpenter and five apprentices to build the schoolhouse. The company also agreed to bring books and supplies from England, but the supplies were lost at sea, and after the mismanaged building project ran out of funds, it was abandoned.

The East India School was one of several such company-sponsored educational projects that came to naught in the early years of the Virginia colony, the most notable being HENRICO COLLEGE. In the end, the company abandoned such efforts and decided to leave education to the settlers themselves.

Eaton, Nathaniel (1609?–1674) English-born theologian who was named first president of HARVARD COLLEGE in 1637. Although he attended Cambridge University, he did not receive a degree and, according to his students, Eaton was "fitter to have been an officer in the Inquisition or master of a house of correction, than an instructor of Christian youth." Eaton had come to the colonies in 1637 with his older brother Theophilus, who was one of the

original patentees of the Massachusetts Bay Company and, with John Davenport, would later found a new colony in New Haven and serve with distinction as governor there for 20 years. It was his brother's influence that earned Nathaniel the appointment as Harvard's first president, but the appointment proved disastrous. A drunkard, the younger Eaton quenched his thirst with embezzled college funds, while feeding his students meatless meals, sour bread and dry pudding. After clubbing his assistant with a cudgel "big enough to have killed a horse," Eaton was charged with assault and fined by the Boston court.

After a year of "beating knowledge" into his nine students, often inflicting "between twenty and thirty stripes at a time," Eaton was dismissed on September 9, 1639, and the college closed for a year until its board of overseers could find a new president. Due for a church trial for his misconduct at Harvard, he fled Boston, eventually returning to England, where he died penniless in debtor's prison.

eclectic reading instruction Any program of reading instruction that combines several different methods, depending on the teacher's diagnosis of student needs. Although most teachers rely on **BASAL READERS** as the core of eclectic reading programs, they may, for example, supplement basal reading instruction with study-skill manuals, children's literature, remedial work and other programs designed to permit faster progress or correct student deficiencies.

Economic Opportunity Act (1964) A landmark federal law that was the centerpiece of the **WAR ON POVERTY**, a far-reaching policy of President Lyndon B. Johnson, who saw education as the key to ending poverty in the United States. The architect of the program, however, was the brother-in-law of the late president John F. Kennedy, R. Sargent Shriver, who had established and effectively directed the Peace

Corps in 1961. The first in a series of antipov-erty measures that Congress passed during the 1960s, the Economic Opportunity Act (EOA) provided for establishment of a range of community action programs, through which local communities could tap federal funds and professional help to combat the causes of poverty in their areas. Under Shriver's direction, the programs offered something for every type of community afflicted by poverty, from health care to loans for needy farmers.

But the heart of the program were four educational programs, the most far-reaching of which was **HEAD START**, a preschool program for economically and culturally deprived children that provided mental and physical health care, welfare, recreation, intellectual and academic training and remediation. During its first summer of operation, the program enrolled more than 500,000 four- and five-year-olds in preschools across the United States. Although professionals paid with federal funds were in charge of each preschool, parents and other community residents participated in the program as paraprofessionals and volunteers.

The other three education-related programs of the Economic Opportunity Act—the National Youth Corps, the Job Corps and Upward Bound—provided for job training to ease inordinately high rates of unemployment among adolescents from low-income families. In designing each program, Shriver and his EOA planners focused on what they believed to be two basic causes of adolescent unemployment: "inherent unemployability" and "lack of salable skills." The former was believed to be a culturally based syndrome, arising from lack of exposure to the world of work and consisting in an inability to take and carry out orders of supervisors, inability to get along with other workers, poor attendance and lack of punctuality, and apathy and lack of motivation. The lack of salable skills was the result of a continuing

decline in the number of unskilled jobs in the face of increasing automation and introduction of technology in industry.

The National Youth Corps subsidized two types of work and training programs for poor high school–age youngsters. One provided and underwrote the costs of part-time jobs for low-income high school students, paying just enough to permit them to remain in school and graduate. The second Youth Corps program provided and paid for work and training experience in nonprofit and public agencies for poor, unemployed, out-of-school adolescents 16 to 19 years old. About 50% of the youngsters went to work maintaining parks or assisting in recreation and welfare agencies, including Head Start. In New York City alone, the in-school program enrolled almost 1 million young men and women from 1967 to 1972, while the out-of-school program put nearly 500,000 to work. Both programs were designed to overcome “inherent unemployability” of the youngsters hired.

The Job Corps also provided jobs and training for adolescents. Unlike the Youth Corps, it was a residential program that transferred economically deprived youngsters, 16 to 21, to residential settings, where they were given free lodging, clothing, meals and health care, along with basic educational and vocational skills, including remedial reading, writing, mathematics and other basic academic skills. Initially a men’s program, it responded to criticism of gender bias by opening residential centers for women as well.

The U.S. Department of Agriculture operated the rural centers and trained youngsters in conservation work. Urban centers were operated by nonprofit organizations, universities and private companies such as International Business Machines Corp. and Westinghouse Corp., which taught the youngsters skills appropriate for job opportunities in urban areas. Because of its residential nature, the Job Corps proved far more costly than the Youth Corps.

Although it enrolled about 750,000 young men and women between 1966 and 1990, it came under a constant barrage of criticism for focusing primarily on “inherent unemployability,” instead of salable skills. Upward Bound, the last of the EOA educational programs, was a catchall of nonresidential basic education, job training and career counseling programs primarily for adults, but also for adolescents.

Though central to the War on Poverty, the Economic Opportunity Act of 1964 was but one of five major pieces of federal legislation based on using education as a vehicle for the disadvantaged to emerge from their low economic conditions. The others were the MANPOWER DEVELOPMENT AND TRAINING ACT OF 1962, the VOCATIONAL EDUCATION ACT OF 1963, the ELEMENTARY AND SECONDARY EDUCATION ACT OF 1965 and the HIGHER EDUCATION ACT OF 1965. All may be said to have had their roots in the reaction to Michael Harrington’s *The Other America: Poverty in the United States* (1962), which shattered the widely believed myth that the United States was an “affluent society.” Indeed, he claimed that between 40 million and 50 million Americans—about 22% to 28% of the nation’s population at the time—lived in poverty, in families earning less than \$3,000 a year.

Substantiated by ample federal government statistics, his data helped mobilize Washington and the American people until their attention was increasingly drawn to the Vietnam War, which siphoned off many of the financial resources that had been dedicated to the programs created during the War on Poverty.

In 1973, many of the job training programs were reorganized and grouped under the COMPREHENSIVE EMPLOYMENT AND TRAINING ACT OF 1973. The Office of Economic Opportunity, which administered the War on Poverty, was dismantled, and by the end of the 1970s, its functions had been scattered throughout the Department of Labor and what was then the

Department of Health, Education, and Welfare (later reorganized into the Department of Education and the Department of Health and Human Services). Of the major programs of the War on Poverty, only Head Start continues to thrive and grow.

economics of education An area of study dealing with the financing of education, the national and community resources invested in education, the kinds of education produced by a society, the allocation of education to various segments of the population, the methods and costs of distributing education and the economic returns of education.

Edison Project A for-profit educational venture founded in 1992 by Whittle Communications L.P., a Knoxville, Tennessee, firm that developed CHANNEL ONE closed-circuit news telecasts to public school classrooms. Created by publisher Christopher Whittle, and headed by former Yale University president Benno Schmidt, the Edison Project initially sought to raise \$2.3 billion for a network of 1,000 technically advanced schools, in which it planned to redesign conventional schooling and develop a new model that would operate at lower costs than public schools, produce better academic results, charge a moderate tuition and yield net profits of about 10%. The theory of the project was to eliminate the administrative costs of conventional public schools by reducing nonteaching staffs to a minimum and invest those funds into higher teacher salaries and educational technology such as WIRED CLASSROOMS, computers for each student and other advanced instructional vehicles. The school day was to be lengthened from the 180 day average of conventional schools to 205 days, with each school day lengthened to eight hours a day. Teachers were to receive month-long training sessions at Edison-operated summer institutes.

Although costs of opening each school—teacher training, computers and books—would average about \$1.5 million, Edison envisioned the costs of educating each child at about the same as public schools. From the outset, however, fund-raising fell far short of expectations, and financial losses forced Whittle to divest himself of Whittle Communications and Channel One and to scale back Edison operations. By 2005, however, Edison had become the nation's largest EDUCATIONAL MANAGEMENT ORGANIZATION of public schools, and, in the 2006–07 school year, it operated 101 schools with 61,000 students in 19 states. About 60% of the schools are regular public schools converted to the Edison system, and about 40% are charter schools. Edison manages the remainder under contract with states. Edison has also diversified into other areas of education, providing after-school tutoring to 250,000 students and managing 175 summer schools with 30,000 students. It also provides student-assessment services and operates a unit in Britain for 20,000 students. A study by Rand Corporation, an independent research organization, found that Edison's intervention had produced less-than-sparkling educational outcomes, however. Average student proficiency climbed 11% in reading and 17% in mathematics from 2002 to 2004, compared with gains of 9% and 13%, respectively, in a matched set of comparison schools with similar student populations. Of all its schools, 84% have registered gains in student performance, 8% have remained unchanged and 8% have seen declines in student performance. Edison disputes the interpretation of Rand figures and claims that its annual gain in "overall student performance" was 5.7% a year over five years—"a rate 2.7 times better than the average-public school system in America."

Edison schools typically divide their faculty into eight "houses." Generalist teachers staff each of three houses—about six teachers

per house—and the remaining five houses are staffed by fine arts teachers, special education teachers, instructional assistants, building services personnel, and office staff members. The “head” of each house meets with members for 45 minutes each day and then joins other heads and the principal to determine overall school strategy. Edison claims that the daily interaction of teachers and consequent sharing of responsibilities in a broad educational plan differentiates its schools from conventional facilities.

(See also DISTANCE LEARNING; ENTERPRISE SCHOOLS; PROPRIETARY SCHOOLS; VIRTUAL CLASSROOM.)

educable mental retardation An archaic term referring to a level of retardation that permits a limited degree of training and education. Sophisticated techniques developed in recent years, however, permit some training of almost all but the most profound levels of mental retardation.

education In its broadest sense, the acquisition of knowledge, skills and values that permit an individual to function and make decisions perceived as self-enhancing. In the United States, education usually has a more limited connotation, namely, knowledge acquired through formal instruction. In this limited American sense, education is divided into four stages—preschool, primary, secondary and higher education—with each stage less CHILD-CENTERED than the last.

Preschool education revolves around socialization—teaching two- to four-year-olds self-control, sharing, getting along with others and other social and intellectual skills needed for living and working in school and society. PRIMARY SCHOOL teaches five- to 10-year-olds such basic academic skills as reading, writing and calculating, along with basic concepts of history, geography, the natural and social sci-

ences, music, art, crafts, sports and health and hygiene.

Secondary school generally has two levels, middle school and high school. Although education at both levels progresses through continually advancing levels of traditional academics, MIDDLE SCHOOL instruction is geared to coping with the specific problems of pubescent children, 11 to 14 years old. High school instruction veers sharply from child-centered methods to subject-centered presentations, in which students are expected to have the maturity to sit quietly in class, taking notes, as teachers lecture at greater and greater lengths. There are two forms of traditional high school education in the United States, academic and VOCATIONAL, although a third form of “GENERAL” EDUCATION developed in the decades following World War II to sequester unmotivated students in relatively undemanding tasks until they reach the age when they are legally free to drop out of school.

Higher education—college and graduate school—provides advanced, specialized studies leading to BACHELOR’S, MASTER’S and DOCTORATE degrees in specific academic or professional areas.

The roots of American formal education reach back to the earliest known Western civilizations, where it originally had two goals: to teach the religion and traditions of the particular civilization. The temple schools of ancient Egypt added a third goal, vocational skills, including writing, mathematics, the sciences and architecture. The Greeks added a fourth goal: the preparation of young men for self-government and leadership roles in state and society.

Formal education in North America began about two decades after the arrival of the first European settlers in Virginia, New Netherland (now New York) and New England. Prior to the existence of schools, local churchmen educated the young by preaching and catechizing in an effort to fend off the satanic barbarism

that settlers feared life in the wilderness would inevitably produce.

After an abortive attempt to found a school at Charles City, Virginia, in 1621, the Virginia assembly established the first school in that area sometime in 1643, using a bequest of 200 acres from a planter named Benjamin Syms. To the north, the Dutch West India Company established the first school in New Amsterdam in 1638 (see COLLEGIATE SCHOOL). Within a decade, the company had established other schools in nearby villages of New Netherland. Although financed by the company, all were taught by teachers appointed by the Classis of Amsterdam, the governing body of the DUTCH REFORMED CHURCH.

In New England, the first settlers in the Plymouth Colony eschewed formal education in favor of instruction by the church and by parents. Boston was the first New England community to establish a formal school, in 1635, and Ipswich and Charlestown each opened a grammar school the following year. In 1638, Cambridge set aside three acres for "a public school or college," while Dorchester, Newbury and Salem opened schools the following year. The goal of all these institutions was not, however, erudition. "We in this country," wrote Jonathan Mitchell, a leading New England minister who helped found Harvard, "being far removed from the more cultivated parts of the world, had need to use utmost care and diligence to keep up learning and all helps to education among us, lest degeneracy, barbarism, ignorance and irreligion do by degrees break in upon us." To assure that goal, in 1642 the Massachusetts Bay Colony legislature ordered local governments, under penalty of fines, to ensure that children be taught "to read and understand the principles of religion and the capital laws of this country" (see MASSACHUSETTS LAWS OF 1642 AND 1647). By 1647 Massachusetts boasted at least nine institutions of formal education, including HARVARD COLLEGE.

In that year, however, the legislature passed a stricter law—the famed "Old Deluder Satan Act"—a landmark piece of legislation that established education as a basic, universal human right in the New World and made establishment and administration of formal schools an obligatory function of government. It also established the principle of local taxation to pay for local schools.

Passed on November 11, 1647, the historic legislation read as follows:

It being one chief project of that old deluder, Satan, to keep men from the knowledge of the Scriptures, as in former times by keeping them in an unknown tongue, so in these latter times by persuading them from the use of tongues, that so at least the true sense and meaning of the original might be clouded by false flosses of saint-seeming deceivers, that learning may not be buried in the grave of our fathers in the church and commonwealth, the Lord assisting our endeavors,—

It is therefore ordered, that every township in this jurisdiction, after the Lord hath increased them to the number of fifty householders, shall then forthwith appoint one within their town to teach all such children as shall resort to him to write and read, whose wages shall be paid either by the parents or masters of such children, or by the inhabitants in general, by way of supply, as the major part of those that order the prudentials of the town shall appoint; provided, those that send their children be not oppressed by paying much more than they can have them taught for in other towns; and it is further ordered, that where any town shall increase to the number of one hundred families or householders, they shall set up a grammar school, the master thereof being able to instruct youth so far as they may be fitted for the university, provided that if any town neglect the performance hereof above one year, that every such town shall pay five pounds to the next school till they shall perform this order.

The effect of the Old Deluder Satan Act was dramatic. Within 10 years of its passage, all eight of the 100-family towns in the colony had complied by establishing GRAMMAR SCHOOLS, while about one-third of the 50-family towns had established PETTY SCHOOLS. Connecticut enacted a similar law in 1650, and Plymouth followed suit in 1658. By 1689, schooling had become an established element of life in British North America. Virginia had 6 schools, Maryland at least 1, New York about 11 and Massachusetts about 23.

Communities without formal petty or grammar schools depended largely on private tutoring, either by ministers at church, private lay tutors or literate mothers, who taught children for a fee in their homes—the so-called DAME SCHOOLS. The dame schools and more formal petty schools taught basic reading, writing and arithmetic (along with basic religious studies) to children five to seven years old. They were the forerunners of the modern-day elementary school. The higher-level grammar school extended the curriculum to include the study of Latin, Greek, literature, advanced religion and other studies needed “to prepare such youths for the college and public service of the country in church, and commonwealth.” The grammar school curriculum lasted seven years and was offered on a year-round basis, allowing students to take leaves of absence during planting and harvesting and resume their studies during those seasons when they were not needed in the fields.

The 18th century saw little change in the basic system of education in the colonies, although it did witness a startling expansion in the number of schools and colleges and a slight shift in emphasis in the curriculum from the religious to the practical, with the introduction of courses on mechanics, agriculture, commerce and business. The industrial revolution had begun, and American colonists demanded

that schools teach their children courses needed for survival in the wilderness and success in an increasingly urban economy.

Education, however, was reserved for white males from families who could afford to forfeit the products of their children’s labor and pay the required school fees. Although some girls were allowed to attend petty school, they were not permitted to attend grammar school or college. And, despite efforts of some school reformers such as ANTHONY BENEZET, black children were denied all education other than biblical instruction that reinforced the notion that blacks were inferior beings, descended from Ham and condemned by God to serve the white man in perpetuity. Ironically, independence brought few changes to the American educational system, despite demands from some humanistic signers of the Constitution for a national system of free, universal public education. BENJAMIN FRANKLIN, BENJAMIN RUSH, THOMAS JEFFERSON, JAMES MADISON, John Adams and GEORGE WASHINGTON, all favored establishment of a national school system that would ensure elementary school education for all children and allow all who passed competitive examinations to progress, respectively, to grammar school, college and, for an elite few, to a national university. Successful completion of national university was to have been a prerequisite for service in all federal elective offices, including Congress and the White House.

The proposal was defeated by southerners, who feared education of slaves would lead to manumission, and by northern industrialists, who profited from child labor and indentured female workers. As a result, the CONSTITUTION omitted all mention of education and left the question to the states. The latter, in turn, left education in the hands of local communities, and ultimately to parents. Few of the latter could afford not to take advantage of their children’s earning power, and formal schooling

actually declined in the early decades of the Republic.

Some educational reformers were at work, however. In New England, CATHERINE BEECHER, EMMA WILLARD and MARY LYON were promoting the cause of women's education. In 1821, Emma Willard established the first female academy that offered an educational equivalent to that of men. In 1823, Catherine Beecher opened a comparable academy in Hartford and over the next 20 years helped open the teaching profession to women. And in 1837, Mary Lyon established the world's first college for women at Mount Holyoke, Massachusetts.

Meanwhile, HORACE MANN and HENRY BARNARD established the first statewide public school systems that guaranteed free, universal elementary school education in Massachusetts, Connecticut and Rhode Island. Although children continued to represent the cheapest and most profitable form of labor, some industrialists found work force illiteracy hurting the quality of their products and gradually losing them important shares of international markets. Many now threw their support to Mann and other educational reformers who called for universal public education to guarantee literacy of all American children. In 1852, Massachusetts passed the nation's first law making school attendance compulsory for at least 14 weeks a year for all children between the ages of eight and 14.

By the end of the Civil War, the public school movement had spread to almost all states outside the South, and northern military authorities forced the South to accept the concept as well. The decade following the Civil War also saw the public school movement spread to higher education, with passage of the Land Grant (Morrill) Act of 1862, which granted federal lands to each state to use for establishing agricultural and mechanical arts colleges (see LAND-GRANT COLLEGES) to train young Americans so as to expand the nation's frontiers.

By 1900, 32 states had passed compulsory education laws, but few states intended those laws to provide children with much more than basic literacy and numeracy. In 1910, only 10% of American children attended high school. The rest went to work in mines, fields and factories, and it would not be until the mid-1930s that the federal government would pass a child labor law that prevented exploitation of children and thus permit them to continue their education beyond elementary school. Indeed, as late as 1940, only 30% of American children completed high school. Few of these were blacks, and the few women permitted to obtain higher education were segregated in women's colleges.

It was not until the end of World War II, however, that the concept of universal education envisioned by Franklin, Jefferson, Adams and Madison would become a reality. First, the G.I. BILL OF RIGHTS of 1944 guaranteed every veteran the right to complete high school and obtain a free college education. A decade later, the landmark U.S. Supreme Court decision *BROWN V. BOARD OF EDUCATION OF TOPEKA*, and a decade after that, the CIVIL RIGHTS ACT OF 1964 eventually forced almost all schools and colleges in the United States, private as well as public, to open their doors to all Americans, regardless of race, color, creed, religion, national origin or gender.

With universal education, however, came a distinct shift in the type of education schools were expected to provide. In the 17th century, America's first schools were dedicated to preparing the wealthiest white males for HARVARD and a life in the ministry or public service. Benjamin Franklin and, later, Thomas Jefferson, expanded the role of schools in society by adding instruction in practical skills needed by young men to build and expand a new nation. Latin, Greek, mathematics, philosophy, French, and English were required for those students headed for lives in church and government. Other schools taught business and commercial

subjects such as bookkeeping to those headed into commerce. Agriculture and mining were essential for students moving westward, while sewing, cooking and other “domestic arts” formed the curriculum that prepared women for their futures as wives and mothers.

The late 1880s forced a new role on American schools—industrial and vocational training. Previously taught in APPRENTICESHIP programs by individual craftsmen in their shops, apprenticeships began disappearing when huge factories absorbed most manufacturing work and so divided elements of labor that few individual workers in mass-production plants were able to master an entire craft—only elements of them. As schools took over the training of America’s future industrial workers, the percentage of 17-year-olds attending high school soared from 6.3% in 1910 to more than 75% by 1965. The presence of so huge an adolescent population forced other changes on the educational system. Initially designed to teach a handful of traditional skills such as carpentry, aviation mechanics or printing, VOCATIONAL EDUCATION was forced to expand into teaching an endless number of occupational skills, from cosmetology to car mechanics. By 1976, options for students in American schools were “limited only by the legitimate needs of adolescents and the vivacity of the imaginations of . . . planners,” according to the U.S. Office (now Department) of Education’s National Panel on High School and Adolescent Education.

By 1980, the role of American schools in society had become one of fulfilling every educational need of every American. The very universality of their reach, however, forced schools to assume other, noneducative roles, including inter alia college advisory and job-placement services; career counseling; psychological counseling; sex education; drug and substance abuse education; antiviolence education; family intervention and social work; pregnancy counseling; supervision and education of the handicapped

and learning disabled; and driver education. A soaring divorce rate and an increase in the number of working mothers forced many elementary schools to establish day care facilities after normal school hours. Most recently, some segments of the public have demanded that schools offer morality education and even violate the Constitution by offering prayer in school.

“Today’s high school is called upon to provide the services and transmit values we used to expect from the community and the home and the church,” declared ERNEST L. BOYER, president of the CARNEGIE FOUNDATION FOR THE ADVANCEMENT OF TEACHING in 1983. “And if they fall anywhere along the line, they are condemned. What do Americans want high schools to accomplish? Quite simply, we want it all.”

Three decades earlier, ARTHUR BESTOR, president of the Chautauqua Institution (see CHAUTAUQUA LITERARY AND SCIENTIFIC CIRCLE), had warned, “The idea that the school must undertake to meet every need that some other agency is failing to meet, regardless of the suitability of the schoolroom to the task, is a preposterous delusion that in the end can wreck the educational system.” By the end of the 20th century, many critics of American public schools agreed that the expansion of American public schools into noneducational functions had obscured their educational functions. By the mid-1990s, a growing number of educators and political leaders began calling for a national effort to raise ACADEMIC STANDARDS. In 1994, Congress enacted the GOALS 2000: Educate America Act, which called for establishment of national academic standards to eliminate state-to-state differences in academic achievement, and, in 1997, the National Assessment Governing Board began a five-year program to develop new nationwide tests to measure academic performance levels of American elementary and secondary school students. To counter growing

public criticism of low academic standards, 49 states and the District of Columbia began developing their own higher academic standards for each grade and administering standardized tests in every subject area to determine whether students were meeting those standards and worthy of promotion.

(See also AFRICAN AMERICANS; COLONIAL EDUCATION; HIGHER EDUCATION; TEACHER EDUCATION; WOMEN'S EDUCATION and other related topics.)

education management organization A privately run organization—usually for-profit—that relies on traditional entrepreneurial methods of private industry to open and operate charter schools and/or manage regular public schools under contract. By the end of the 2006 school year, just over 50 EMOs were managing more than 520 schools with a student population of more than 230,000 in 29 states and generating revenues of just under \$2.6 billion. Only five years earlier, there were but 36 companies with about 370 schools and 142,700 students in 25 states, generating revenues of less than \$1.5 billion. Pioneered in 1995 by Edison Schools Inc., in New York City, the concept of the EMO has scored only mixed successes, as many managers grounded in business management techniques failed—or simply did not know how—to estimate accurately the time, skills, energy and money required for operating schools and educating children with a wide range of learning abilities, economic backgrounds and cultural traits. Indeed, Edison, which expanded from four schools in 1995 to 79 schools with 38,000 students in 1999, absorbed losses of \$500 million before registering its first profit in 2003. It now manages 101 schools with 61,000 students in 19 states, and it has diversified its operations to include after-school tutoring, summer schools, and academic assessment services for 250,000 students. It also operates in Britain.

education, philosophy of The overall pedagogical doctrine governing an institution's teaching methods, as opposed to EDUCATIONAL GOALS, which govern the ends those methods are designed to achieve. Educational philosophies span a range from an extreme subject-centered or goal-centered approach to an extreme student- or CHILD-CENTERED approach. In the former, the subject matter or educational goals take precedence over what students may perceive as their individual needs. Thus, 18th- and 19th-century primary school teachers in the United States routinely used a goal-oriented approach by whipping or beating children to encourage proper classroom behavior. Instruction was purely subject-centered (as it is in many university lecture halls today) with teachers determining the curriculum and subject matter and students expected to sit quietly and silently, taking notes, while teachers lectured or presented materials on blackboards.

The child-centered approach, which was first introduced in a handful of experimental schools in the late 19th century, allows student curiosity and individual needs to determine the curriculum, while teachers adapt instructional methods to those needs. At the most elementary level, a teacher might, for example, convert a student's impulse to "play house" by showing the child how to cook and by incidentally teaching the child various measuring and calculating skills. Most modern elementary and secondary schools rely on a practical approach that draws on elements of many educational philosophies and research findings of educational psychologists to achieve each school's stated educational goals.

Education Abstracts A reference book published irregularly from 1949 to 1964 by the United Nations Educational, Scientific and Cultural Organization (UNESCO) in Paris, France, with abstracts on educational research from countries around the world.

Educational Alliance A broadly based educational institution founded in 1889 by the established and assimilated American Jewish community of German background to “Americanize” poor, East European Jewish immigrants. In 1880, the majority of Jews in the United States were of German ancestry. Most had arrived in the 1840s and 1850s from cultured, German market communities in Bavaria and Baden-Wurttemberg and had spread across their new land and become entrepreneurs. By 1880, most were not only successful and well educated, they had also assimilated into the life of their communities as much as the Protestant majority would permit. Even their synagogues had adopted distinctively American-Protestant characteristics, with organs, choirs, hymn singing, sermons and responsive readings in English. Children of Reform Jews, as they called themselves, attended American public schools and spoke only English.

From 1881 to 1914, however, a wave of 2 million Jewish immigrants arrived from Russia, the Austro-Hungarian Empire and Romania. Instead of fanning out across the *goldeneh medina*, or “golden land,” as they called the United States in Yiddish, they congregated in ghettos of their own making in major cities such as New York, Boston, Philadelphia and Chicago. There, they reproduced the living conditions of the shtetls where they had been forced by law to live in the countries they had fled. Congregating according to language groups in ghetto subdivisions, most attempted to re-create and perpetuate the familiar ways of “the old country.” At the time, a wave of violent ANTI-SEMITISM was sweeping Europe, and assimilated, well-to-do American Jews of German background feared the alien image projected by their newly arrived coreligionists would set off similar violence in the United States.

To forestall such an eventuality, three Jewish organizations—the Hebrew Free School

Association, the YOUNG MEN’S HEBREW ASSOCIATION and the Aguilar Free Library, supported by wealthy American Jews of German ancestry—formed the Educational Alliance in 1889 to provide a comprehensive program of social and educational activities on the Lower East Side of New York City for the newly arrived Eastern European Jews. The undertaking was an enormous one, providing kindergartens to teach English and American ways to preschoolers. Hebrew classes for elementary school children provided Americanized Jewish studies, including proper Hebrew (as opposed to Yiddish) and Reform Judaism. The alliance provided reading rooms and formal classrooms for a variety of studies. It sponsored singing groups, English classes and naturalization classes for adults, art exhibits, lecture programs and physical education activities.

In 1899, the alliance opened what it called a Breadwinner’s College in New York, offering a comprehensive program of elementary, secondary and college-level education to unschooled, adult Jewish immigrants. High school and college-preparatory classes were offered in English grammar, composition, literature, U.S. history, geography, mathematics, science and language training. College level courses, taught by eminent American lecturers, included philosophy, cultural history, literature and social science. The Breadwinners’ College served as a model for America’s first degree-granting, evening adult-education programs that the CITY COLLEGE OF NEW YORK established in 1909.

The alliance offered more than formal education, however. It opened a branch of the Penny Provident Fund, a savings organization, to teach thrift. It opened a summer camp for boys, where it taught health and hygiene, as well as sports, crafts and recreation. It sponsored meetings to teach mothers and fathers the American way of raising their children, and it opened a School of Religious Work and a People’s Synagogue to teach the new immi-

grants the Americanized Reform Judaism. The Educational Alliance today operates a nursery school, after-school programs, a Hebrew school, summer camps, counseling services, vocational guidance, residential and nonresidential drug treatment programs, programs for runaways and the homeless, a Parenting Center and Senior Center and a wide variety of other social services for all age groups in New York.

educational attainment The percentages of adult Americans who have completed high school and various levels of higher education. By 2002, the proportion of Americans 18 years old and over who had completed high school or its equivalent reached an all-time high of 85.7%. Sixty years earlier, at the beginning of World War II, only 24.5% of the population had completed high school. More than 86% of adults 25 to 29 years old had completed high school by 2002, compared with only 63% of those 75 years and older.

Educational attainment varied substantially by race and gender. Nearly 89 percent of white non-Hispanics aged 25 or older had completed high school, compared with 79% of African Americans and 57% of Hispanics. The racial gap narrowed dramatically among young adults aged 25 to 29, with 93% of whites and 87.6% of African Americans in that age group having completed high school. Only 62.4% of Hispanics in the 25- to 29-year-old group had completed high school—largely because their ranks continued to be swelled by large numbers of poorly educated immigrants.

A slightly greater percentage of women 25 years or older had completed high school than men—84.4% versus 83.8%—but, in a reversal of trends in the 1990s, when more women went to college than men, a significantly higher percentage of men had completed college in 2002—31.7% versus 27.3% of women.

educational consortium A voluntary combination of resources by two or more educational institutions in the interests of efficiency and financial savings for themselves, their faculty, staff and students. Such consortia may, for example, share a single, central library or permit cross-registration of students who can earn credit at their own college for courses taken at all other colleges in the consortium. The number of such consortia numbers in the hundreds, but among the better known are the Claremont Colleges in California; Swarthmore, Bryn Mawr and Haverford Colleges, near Philadelphia; Amherst, Hampshire, Smith and Mount Holyoke Colleges and the University of Massachusetts, in Amherst; and the University of North Carolina, Chapel Hill, and Duke, North Carolina and North Carolina Universities.

educational consultant Any advisor specializing in educational matters, but commonly used to refer to an educator with particular skills in school and college placement. Although there are no state or federal licensing or certification procedures in most of the United States, all reputable counselors are members of the Independent Educational Consultants Association (IECA), a standards-setting organization based in Fairfax, Virginia. In addition, many belong to the National Association of College Admission Counselors.

Charging fees of \$100 to \$3,000 or more, consultants help students select the most appropriate private schools or colleges to apply to based on each student's personality, interests, academic record and motivation. They then help the student through the complex application process. Consultants cannot guarantee admission for their clients, but by selecting the schools most appropriate for their clients they optimize the student's chances.

educational counselor Any advisor in the field of education, but more commonly a

specialist in learning disorders who can test children for and diagnose specific learning disabilities and prescribe a course of treatment, or "retraining." Counselors may or may not provide such retraining themselves, if the student's school lacks the professional staff and facilities. Although few states require any certification or licensing procedures, all competent educational counselors work closely with pediatricians, and they are almost always members of the Independent Educational Counselors Association (IECA), a professional standards-setting association in Fairfax, Virginia.

educational goals The body of knowledge a school administration seeks to impart to its students. Required in clearly written form for ACCREDITATION by all school and college accreditation agencies in the United States, an institution's educational goals vary according to the makeup of the student body, the institution's sponsors, the demands of parents, the demands of society, the demands and regulations of government and the tenor of the times. Goals may include preparation for admission to academically selective institutions of higher learning, indoctrination in the beliefs of a particular religion, behavior modification, treatment of learning disabilities, political indoctrination, research skills needed for acquisition of pure knowledge, training for the military, training for nonmilitary government service, professional training, vocational and technical training, encouragement of exceptional talents or academic skills or a combination of any of these.

Educational Policies Commission A group formed by the NATIONAL EDUCATION ASSOCIATION and the AMERICAN ASSOCIATION OF SCHOOL ADMINISTRATORS to develop and publish a formal set of specific national goals for American public school education. Although no longer in existence, the commission was the first body to

establish such goals, and it set an example for a myriad of similar bodies formed after World War II. Published in 1938, the commission's objectives consisted of four categories: Self-Realization, relating to academic skills, health and hygiene, cultural appreciation and morality; Human Relationship, relating to human relations, social skills and home and family life; Economic Efficiency, relating to personal finances, consumer protection and occupational information and choice; and Civic Responsibility, relating to justice, tolerance, political obligations and devotion to democracy.

(See also EDUCATION REFORM.)

Educational Products Information Exchange Institute (EPIE) A nonprofit organization chartered by the Regents of the University of the State of New York as a clearinghouse of information on educational products for school districts and state educational agencies nationwide. Together with its Software Evaluation Office, EPIE allows subscribers to identify the entire range of computer and video software, textbooks and other instructional materials by category, along with the publishers and producers of each item.

educational psychology The study of the relationships between psychology and formal instruction in school and the application of learning theories to teaching. Educational psychology attempts to tie and apply all aspects of human psychology to teaching in an effort to develop more effective instructional methods and improve student learning. Among the areas studied in educational psychology are human development, human senses and perception, human personality, attitudes, mental health, behavior modification, learning theories, testing, instructional methods and technology, and school architecture and interior design and their effects on learning.

Educational Research Service A nonprofit organization that provides several thousand subscriber school systems and educational agencies with independent educational research reports, summaries of research reports by other organizations and a broad base of educational information and data. ERS is sponsored by the American Association of School Administrators, the American Association of School Personnel Administrators, the Council of Chief State School Officers, the National Association of Elementary School Principals, the National Association of Secondary School Principals, the National School Boards Association and the National School Public Relations Association.

Educational Resources Information Center (ERIC) The core of a vast network of data collection and dissemination centers that together provide the world's largest educational database. Readily accessible from university and major public libraries, ERIC is supported by the Office of Educational Research and Improvement (OERI), a division of the U.S. DEPARTMENT OF EDUCATION. Sixteen regional clearinghouses, each specializing in specific subject areas, feed the central database.

Located at a variety of universities and educational organizations across the United States, ERIC clearinghouses have specialized databases on adult, career and vocational education; educational assessment and evaluation; community colleges; counseling and student services; disabilities and gifted education; educational management; elementary and early childhood education; higher education; information and technology; languages and linguistics; reading, English and communication; rural education and small schools; science, mathematics and environmental education; social studies/social science education; teaching and teacher education; and urban education. ERIC also maintains eight adjunct clearinghouses for art education, compensatory education, clinical

schools, consumer education, ESL literacy education, law-related education, test collection and United States–Japanese studies.

ERIC also prepares and provides reports, interpretive summaries, reviews and bibliographies, and it provides copies of educational documents at a nominal cost. ERIC publishes its own reference documents, including the *Thesaurus of ERIC Descriptors*, listing terms used in the ERIC system; *Resources in Education*, a monthly journal with abstracts of research reports; the *Current Index to Journals in Education*, with entries from about 932 education periodicals; and the *Directory of ERIC Resource Collections*.

educational specialist The highest level of professional achievement in the field of education, requiring the most advanced study at the graduate school level, leading to the Education Specialist Degree (Ed.S.). Admission to Ed.S. programs requires years of graduate study and training in education, the acquisition of other advanced degrees in education, considerable professional experience and notable achievement in practical education or educational research. Work for the degree itself usually requires 30 to 40 semester hours beyond the master's degree. A reflection of the student's deep interest in a particular area, the Ed.S. can be a valuable asset for professional advancement. Although no dissertation is required, students must complete an original research project and pass comprehensive examinations.

educational television (ETV) Those television stations specializing in the broadcast of formal and informal instruction and culturally enriching materials. Although education television in the United States dates back to the creation of the first television stations, it did not begin to thrive until passage of the Educational Television Facilities Act (1962), a federal law that provided for fifty-fifty matching grants for building and improving educational television

stations. Limited to \$1 million per state, the grants were made available to universities, schools, state and community agencies and nonprofit community corporations and helped triple the number of ETV stations over the next five years to well over 250. In 1981, the system of matching grants was changed to provide three dollars of government money for every one dollar raised by the station. The growth of educational television and the range of offerings expanded dramatically with passage of the Public Broadcasting Act of 1967, which created the publicly supported CORPORATION FOR PUBLIC BROADCASTING, a centralized production enterprise that provides local ETV stations with educational and culturally enriching programs they could not afford to produce on their own.

ETV carries a wide mix of educational and culturally enriching programs, ranging from formal courses for which viewers may earn high school or college credit to entertaining programs that help teach preschoolers to read, write and calculate. Public affairs programs, live theater presentations, classic films, concerts, dance recitals, opera, culinary demonstrations, historical documentaries and science documentaries are just a few of the types of programs available on ETV.

Educational Testing Service (ETS) A private, nonprofit developer and publisher of standardized tests, which include the SCHOLASTIC ASSESSMENT TESTS (SATs), GRADUATE RECORD EXAMINATION (GRE), the COLLEGE LEVEL EXAMINATION PROGRAM (CLEP), the NATIONAL TEACHERS EXAMINATION (NTE) and others. ETS was created after a 1946 study led by Harvard University president JAMES B. CONANT found testing procedures in the United States inconsistent, invalid and unreliable. Scattered among a variety of unrelated organizations such as the College Entrance Examination Board, the Educational Record Bureau, the National Committee on Teacher Examinations of the American Council

on Education, tests were often unrelated to prior education due to the lack of coordination between testing organizations and school and college communities.

Funded by the CARNEGIE FOUNDATION FOR THE ADVANCEMENT OF TEACHING, Conant's report recommended forming a new, private, nonprofit organization, specialized in test research and development, to publish and administer tests for a variety of cooperating organizations. The Carnegie Foundation provided \$750,000 to fund the new organization, and the College Entrance Examination Board immediately turned over development of its widely used battery of college admissions tests, then called the Scholastic Aptitude Tests and Achievement Tests (now the Scholastic Assessment Tests) to ETS. In the ensuing years, ETS grew into the world's largest testing organization—a multinational operation, complete with for-profit subsidiaries and annual revenues approaching \$1 billion. Indeed, its phenomenal growth and expansion beyond the boundaries of its original charter attracted charges of possible anti-trust violations for monopolizing the market for computerized testing. Its profit-making subsidiaries compete directly with private businesses in the thriving areas of professional licensing and certification and government testing. More than 12 million students worldwide take various ETS college and graduate-school admissions tests each year, at costs ranging from \$25 to more than \$200 a test. Some 40% of ETS revenues flow from overseas, where it has large assessment-testing contracts with China and India. As revenues have grown, so have the compensation packages ETS pays to its executives—now well into the mid six-figure range.

educational warranty A special certificate issued to high school graduates assuring prospective employers that the bearer has the basic skills needed to enter the workforce. If the

employer is not satisfied, the warranty provides that the school district will provide the required remedial training at the district's expense. Pioneered during the late 1980s, the educational warranty was a response of some school districts to business community complaints that they were spending enormous sums to provide remedial training to entry-level workers whom high schools had graduated without adequate job skills.

Originally tried in relatively small areas such as Prince Georges County, Maryland, and Plymouth, Massachusetts, the educational warranty was then adopted by the huge Los Angeles Unified School District, where more than half the more than 600,000 students lived below the poverty line and spoke little or no English. At the time, Pacific Bell Telephone Co. had complained that more than half its applicants for entry-level jobs, such as operators, had failed seventh-grade reading and mathematics tests. The school district promulgated a warranty system based on the recommendations of the U.S. Secretary of Labor's Commission on Achieving Necessary Skills, which called on schools to help students develop three sets of skills for the job market: basic skills in reading, mathematics and effective communications; thinking skills, including problem solving, reasoning and mental visualization; and personal qualities such as integrity, self-management, initiative and responsibility.

Implementation meant an overhaul of teaching methodology in some schools. Among the innovations the warranty system produced was early introduction of computer training and rearrangement of classroom instruction to allow students to work in teams, an arrangement that often helped students solve problems and understand the solutions faster than by working individually in isolation.

Education Amendments of 1972 A series of amendments to the Elementary and Second-

ary Education Act of 1965, the most important of which is commonly referred to as Title IX, which banned gender discrimination in public education. "No person in the United States," said Title IX, "shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any education program receiving federal financial assistance." Title IX forced formerly all-male institutions to open their doors to women, thus giving women the same educational rights as men for the first time in American history. Title IX not only gave women equal academic opportunities at every level of American education, it forced all schools and colleges receiving any direct or indirect federal funds (even funds from federal loans to students) to provide women with equal extracurricular opportunities and facilities, in varsity and intramural athletics as well as nonsports.

(See also GENDER DISCRIMINATION; NATIONAL COLLEGIATE ATHLETIC ASSOCIATION.)

Education Commission of the States An organization formed under the Interstate Compact for Education in 1966 to help the governors, legislators and educators of member states improve public education. The commission has a full-time staff to provide technical assistance, administer interstate educational projects, develop model education programs and laws, publish materials and research and serve as a liaison with the federal government.

Education Development Center, Inc. A publicly sponsored, nonprofit organization that, among other services, develops curricula and teaching materials in mathematics, science, language arts, social studies, violence prevention, health education and other subjects. Founded in 1958 by scientists at the Massachusetts Institute of Technology who were concerned with the quality of high school physics

instruction, the center proceeded to create an appropriate physics curriculum that was eventually taught to 200,000 physics students, or half the high school physics students in the United States. With the help of other scientists, teachers and psychologists, and funded by the National Academy of Sciences and MIT, the center expanded its work to develop a complete science curriculum called Elementary Science Study, which provides appropriate teaching materials for every age student, from kindergarten through twelfth grade. Based in Newton, Massachusetts, the center subsequently developed curricula and teaching materials for mathematics and other subjects and then diversified its work to include teacher training, publishing and study tours and international educational exchanges.

Education for All Handicapped Children Act A federal law passed in 1975 that reversed the century-long practice of removing physically and mentally handicapped, unmanageable and delinquent children from their homes and communities and placing them in isolated residential facilities. Expanded dramatically and renamed the INDIVIDUALS WITH DISABILITIES EDUCATION ACT (IDEA) in 1988, the 1975 legislation asserted the right of all children to the best possible education in the least restrictive environment, free of charge. The law provided a continuing flow of funds for public schools to provide such education. When the law was passed, only about 1.6 million of the 8 million handicapped children in the United States were attending public schools. Most of the rest were either languishing idly at home or incarcerated in residential facilities. In neither case did they receive any formal or special education that enhanced the possibility of eventual independence.

Called SUPPLEMENTARY SCHOOLS when they first appeared in the early 19th century, residential institutions for the handicapped grew

in number as infant mortality rates declined and as urban life made it difficult for most parents to provide safe quarters for children who could not attend conventional schools. Originally operated by churches and philanthropic organizations, many became public institutions in the 1870s and 1880s. As the lowest on most state government lists of educational spending priorities, many deteriorated into Dickensian hellishness, where ill-paid, untrained workers abused or ignored their charges and offered little or no education. Television exposés of scandalous conditions at a score of institutions in the late 1960s and early 1970s, coupled with spiraling costs of maintaining such ineffective residential facilities, provoked a public clamor for “deinstitutionalization” of all but the most severely handicapped and incorrigible children.

Educators who, by then, had developed a variety of new, effective, educational techniques for formerly uneducable children, supported the deinstitutionalization movement, saying that isolating handicapped and delinquent children was educationally counterproductive. Such children, they maintained, would fare better educationally if placed in the educational “mainstream” of conventional public schools (see MAINSTREAMING) and provided with special education and other services to supplement conventional education. The result was the Education for All Handicapped Children Act of 1975. Commonly called the Disabilities Education Act, the law forced the closure of the most primitive children’s institutions and brought an end to most construction of new residential facilities. It transferred the burden of educating the vast majority of mentally, physically and behaviorally handicapped children to public schools in the communities where the children lived, guaranteeing every handicapped child, three to 21 years old (about 6 million in 2000), equal rights to education

and full protection against discrimination of any kind.

In addition to federal funding for special education, the law provided funding for all necessary construction to make school facilities “barrier free” and accessible to handicapped children and for all special transportation to carry children to and from school. The law was amended and refined in 1983, 1986 and 1988 to expand the role of the federal government in existing programs and extend coverage to the handicapped from birth into adulthood and to expand special education in preschool.

The law was costly, however, with all taxpayers sharing the costs of special education for the handicapped, and parents of handicapped children paying no more than any other taxpayers for their children’s education. Although the percentage of handicapped children ranged between 7% and 12% of the student population in the early 1990s, they absorbed between 20% and 25% of funds spent on public school education. Moreover, those costs began spiraling almost uncontrollably, as state and federal courts consistently expanded school responsibilities under the act to include more severely handicapped students, such as autistic children and the deeply retarded, in regular classrooms. By 2000, the U.S. Department of Education was spending 18% of its annual budget on special education, benefiting about 11.2% of the elementary and secondary school population.

The theory that generated expanded mainstreaming was that even the severely handicapped benefitted more in conventional classrooms than in segregated, special education facilities and that their classmates would learn tolerance. But the expanding, court-imposed doctrine of “full inclusion” so impeded teacher ability to pursue normal teaching activities and so interfered with the education of nondisabled students that the AMERICAN FEDERATION OF TEACHERS called for a halt to the policy.

One by one, state legislatures began setting limits to full inclusion in an effort to maximize the benefits of “mainstreaming” to the handicapped without affecting the quality of education of the nonhandicapped.

(See also INDIVIDUALS WITH DISABILITIES EDUCATION ACT.)

Education for National Security Act A federal law passed in 1984 to improve the quality of American elementary and secondary school science and mathematics education. At the time, a “cold war” had been raging between the Soviet Union and the United States for more than three decades, with each attempting to gain global political and military dominance by using science and technology as key weapons. The act authorized the NATIONAL SCIENCE FOUNDATION to establish institutes to train (and retrain) elementary and secondary school science and mathematics teachers. The law also established Congressional Merit Scholarships for future teachers studying mathematics, science and engineering. It also provided financial aid for state and local agencies to improve teacher instructional skills in mathematics and science and to establish MAGNET SCHOOLS for students gifted in mathematics and science. In addition, the law established Presidential Awards for Teaching Excellence in Mathematics and Science and special recognition for outstanding school mathematics and science programs.

Education Index A publication that has continuously indexed authors and subjects in selected English-language educational periodicals since 1929. Published 10 times a year by H. W. Wilson Co., the index includes references on administration and supervision; preschool, elementary, secondary, higher and adult education; counseling and personnel service; teaching methods; and curriculum—each with a wide variety of subcategories.

Education Professions Development Act

A 1967 federal law that created programs for easing a then-increasing shortage of qualified public elementary and secondary school teachers. The shortage had resulted from 20 years of post-World War II industrial expansion that had left teacher salaries noncompetitive with those for comparable positions in commerce and industry. The act created a variety of programs that encouraged young men and women to enter teaching in exchange for a variety of college-level scholarships. One section of the law created the Career Opportunities Program, TEACHER CORPS and the Urban and Rural School Development Programs to draw teachers into low-income areas. The act also created a network of teacher training and information exchange centers and programs to provide specialized teacher training in bilingual education, preschool education, vocational education and special education. Most of the programs began to disappear as states and local communities raised teacher salaries to make the profession more attractive and as colleges and universities improved their own specialized teacher training programs.

education reform Any change or proposed change in the existing methods or content of instruction in schools and colleges. Education reform may be the result of initiatives from within or without the educational establishment and initiated by teachers, administrators, government officials, students, parents of students or interested citizens. Historically, education reform in the United States has always aimed at expanding the reach of American education to an ever more heterogeneous population. Originally designed for privileged, white, English-speaking Protestant males, American education reached only about 10% of the adolescent population at the beginning of the 20th century, when most children went to work in fields, factories and mines at ages as young as

five. In the 20th century, reformers have forced American public schools to service students of every economic class, race, religion, ethnic background, gender, language group and physical and mental condition. Moreover, the services demanded of schools go well beyond the teaching of academic skills. They include a vast range of psychological and social services that no society on Earth has ever attempted to provide to so heterogeneous a student population. As the student population has increased and grown more diverse, academic assessment scores have necessarily declined from levels when only a privileged few attended schools. Although often interpreted as reflecting a decline in quality of education, the drop in scores has merely reflected the dramatic change in the student population—a change that necessarily requires a reformulation, or reform, of educational methods.

American education has, however, been the target of reform since the first schools opened in the colonial wilderness. Initially designed to teach piety and strict adherence to the Puritan or Presbyterian churches, the earliest colonial schools were beset by demands from parents and leading citizens, including BENJAMIN FRANKLIN, to teach children practical courses more appropriate for life in the wilderness. Reformers such as Franklin forced colleges, all of them originally theological institutes, to add practical and professional education. Early 19th-century reformers such as HORACE MANN and HENRY BARNARD sought to make schools public by opening them to all children, regardless of gender, race and ability to pay. Later, reformers such as JOHN DEWEY sought to force schools to abandon corporal punishment and other forms of classroom brutality and humiliation as basic teaching methods and substitute CHILD-CENTERED EDUCATION. Still other 19th-century reformers introduced citizenship training as a standard part of the public school curriculum and a broad

“Americanization” program to convert millions of immigrant children into “Americans.” Mid-20th-century reformers effected racial DESEGREGATION of American education and “MAINSTREAMING” of handicapped children into conventional schools and classes.

Late 20th-century goals centered on lifting educational standards of American public schools and extending equal educational opportunities to all Americans, regardless of race, ethnicity, national origin or gender. To that end, the federal government enacted a school reform program entitled GOALS 2000, providing federal money to help school districts meet national standards in core subjects and assure that 90% of American high school students graduate and obtain diplomas. To reduce GENDER DISCRIMINATION in coeducational schools and colleges, organizations such as the AMERICAN ASSOCIATION OF UNIVERSITY WOMEN, urged a return to single-sex classrooms. In an effort to reform education of non-English-speaking students and students with poor command of English, some reformers urged adoption of various forms of BILINGUAL EDUCATION, using Spanish, French and even BLACK ENGLISH as a language of instruction. In 1997, the National Assessment Governing Board began still another federal reform program—a five-year scheme to develop new tests to be given nationwide to measure academic performance levels of American elementary and secondary school students, and, ultimately, develop minimum national ACADEMIC STANDARDS. The states, meanwhile, added a reform program of their own. To counter growing public criticism of low academic standards, 49 states and the District of Columbia began developing their own, higher academic standards for each grade and administering standardized tests in every subject area to determine whether students were meeting those standards and worthy of promotion. Although students in 17 states produced startlingly high results,

their counterparts in 24 other states scored so poorly that many schools were forced to ignore test results and to promote or graduate high school students despite their dismal test scores or see entire student bodies retained. Some educators called the testing a national educational disaster, and state after state immediately began resetting acceptable test grades to absurdly low levels until they could develop new educational reforms to raise academic achievement.

Three other major educational reform movements, each led by renowned professors of education, were also under way as the 20th century neared its end: the School Development Program, developed by Yale University psychiatrist JAMES P. COMER to reform inner-city public schools by providing social, health and academic services to students; the ACCELERATED SCHOOLS PROJECT of Stanford University professor of education Henry Levin, to elevate student academic performance and reduce student drop-out rates by making school curricula more demanding and raising teacher expectation levels; and the COALITION OF ESSENTIAL SCHOOLS, which Brown University professor of education THEODORE SIZER developed to subordinate school administrative needs to the academic needs of students and place teachers in control of the curriculum.

education spending The total amount of public and private funds dispensed on formal education. By 2004, the United States was spending nearly \$1 trillion, or almost 10% of the gross domestic product, on education, more than 70% of it on primary and secondary education and the rest on higher education. The United States ranked seventh in the Western world, tied with Canada, in terms of percentage of GDP spent on education, behind Finland (6.0%), France (5.8%), New Zealand (7.0%), Norway (6.7%), Portugal (5.7%) and Sweden (7.4%).

Federal spending on education totaled about \$110 billion, of which nearly 50% (\$54.6 billion) was earmarked for elementary and secondary education, 20.5% (\$22.6 billion) for higher education, 23.5% for research programs at universities and related institutions, and the rest (\$6.4 billion) for a variety of miscellaneous programs such as the National Endowment for the Arts, Library of Congress and so forth. Of nearly \$565 billion in state and local spending on education, nearly 70% went to elementary and secondary education and the rest to higher education.

American public elementary and secondary schools, in turn, spent an average of about \$9,000 per student, of which about 57% was for instruction and another 14% underwrote support services, including special education, food and transportation. About 11.5% of outlays were capital expenses, and 2.5% covered interest on outstanding debts. Only 6.6% of total spending went into administration—which many critics of public education contend absorbs funds needed for improved instruction.

In higher education, public four-year institutions spend an average of more than \$30,000 per student and public two-year colleges spend nearly \$10,000 per student. Private four-year colleges are thought to spend close to \$40,000, while private two-year colleges spend as much as \$15,000 per student. Public four-year institutions of higher education spend only about 30% on instruction and 4.6% on scholarships. They spend about 8% on academic support, which includes libraries, and 5% on student services. More than 10.5% is spent on research; 9.6% on auxiliary enterprises; 9.5% on hospitals associated with the schools; 9% on institutional support, which includes administration; 6.4% on operations and plant maintenance; and 5% on public service.

education tax credits Credits that eligible taxpayers may make against federal income

taxes for qualified expenses of higher education. Beginning in 1998, Congress established two types of higher education tax credits:

- Hope Education Tax Credit, allowing a taxpayer to claim a tax credit up to \$1,500 a year per student during the first two years of undergraduate study. The credit applies to tuition and fees only—not books or room and board—and is only available to taxpayers whose income is under \$100,000 if filing a joint return, or \$50,000 if filing a single return. The student must have a high school diploma, be enrolled in a degree program and attend college at least halftime. The credit is not available to anyone convicted for possession or distribution of controlled substances.
- Lifetime Learning Tax Credit, allowing a federal income tax credit of up to \$2,000 a year per family for tuition and fees for the student, a spouse or dependents. The credit is not applicable for books or room and board, but the student may be enrolled full time, half time or less than half time, and the credit is applicable for an indefinite number of years to undergraduate and graduate studies, as well as a training program to acquire or improve job skills. The same family income limitations as the Hope Education Tax Credit apply to the Lifetime Learning Tax Credit, however, and as with the Hope Credit, it is not available to anyone convicted of possession or distribution of controlled substances.

In 1999, the first year in which the two credits were available, nearly 5 million Americans claimed credits of about \$3.5 billion, with more than half the benefits claimed by taxpayers earning between \$35,000 and \$75,000.

(See also COLLEGE SAVINGS PLAN; FINANCIAL AID; TUITION SAVINGS PLANS.)

Edwards, Jonathan (1703–1758) Colonial theologian-educator and third president of the College of New Jersey (later PRINCETON UNIVERSITY), from 1757 until his death. Edwards is

best known in American history as one of the progenitors of the GREAT AWAKENING, an evangelistic fervor that swept across the American colonies in the 1740s. Born in Connecticut, Edwards was a child prodigy who enrolled in the Collegiate School of Connecticut (later, YALE COLLEGE) and graduated as valedictorian of his class in 1720. After studying theology for two years, he became a lay minister in New York before returning to Yale as a tutor and obtaining his master's degree in divinity. He was ordained in 1727 and, two years later, assumed the pastorate of his grandfather's prestigious church in Northampton, Massachusetts, where his charisma and oratorical skills gripped the townsfolk. Like other evangelists, Edwards preached the possibility of redemption through personal conversion, thus contradicting the class-oriented doctrines of traditional Protestant churchmen. The latter preached that the common man was born tainted with original sin and condemned to eternal damnation and that only the nobility and landed gentry who supported the church could hope for salvation. Edwards's preachings infused his listeners with the belief that all men were indeed created equal. "The spirit of God began extraordinarily to set in, and wonderfully to work," Edwards wrote, and by the summer of 1735 the town "seemed to be full of the presence of God."

As his sermons were published and read elsewhere, the fervor that gripped Northampton swept across Massachusetts and Connecticut and down to New Jersey. Although religiously based, Edwards's message and the movement it inspired had a powerful impact on American education by splitting traditional churches into "New Light" and "Old Light" factions (see NEW LIGHT-OLD LIGHT CONTROVERSY). With churches still the center and source of all acceptable community knowledge and learning, the split produced new churches led by clergy professing the equality of man before God. In so doing, they both expanded education and

eroded the foundation of a class system that had been the basis of ever increasing taxes on the colonies by their parliamentary masters in England. But as colonists redirected the fervor of their rebellion against the English church into political rebellion against England itself and excessive parliamentary taxation, "Old Light" religionists began reasserting themselves against the excessive zeal of "New Light" evangelicals. In Massachusetts, a council representing 10 congregations dismissed Edwards from his Northampton parish in 1750, and he moved to what was then the frontier, in Stockbridge, Massachusetts, to pursue his conversions among the colonists and Indians. Four years earlier, a group of New Light Presbyterians had founded the College of New Jersey, and, in 1757, invited Edwards to serve as president. He was inaugurated in 1758, but died during the smallpox epidemic a year later.

Edwards v. Aguillard A 1987 U.S. Supreme Court decision that, in effect, declared unconstitutional a Louisiana law that prohibited teaching the theory of evolution in public schools unless "CREATION SCIENCE" was taught with it. Louisiana's law, entitled the Louisiana Balanced Treatment of Creation-Science and Evolution-Science in Public Instruction, purposely did not require the teaching of creation science. The lawmakers recognized that creation science was part of a religious doctrine that could not be a required element of the public school curriculum. Indeed, the law permitted schools to omit teaching both creation science and the theory of evolution. But the law required that, in the interests of academic freedom, if the theory of evolution were taught, such teaching had to be accompanied by instruction in "creationism."

In reversing the Louisiana law, the Supreme Court ruled that the law was designed to discourage teaching of accepted scientific theories while promoting a specific religious belief, and,

as such, violated the ESTABLISHMENT CLAUSE of the First Amendment of the Constitution mandating complete separation of church and state.

efficacy An approach to teaching based on the premise that intelligence is learned and not innate and that all children—especially children of color—can learn more than they now do if teachers and schools raise their expectations of their students. Developed in 1985 by African-American social psychologist Jeff Howard, the efficacy program called for all children to complete their K–12 education with a mastery of calculus, mastery of at least one foreign language, and “mastery of written and spoken expression of the English language [as demonstrated] by writing, presenting and defending a literate, cogent, well-researched essay of 25 pages.”

Teachers and school administrators using the efficacy approach were “retrained” at the Efficacy Institute, an organization Howard founded in Lexington, Massachusetts, that also provided racial and gender sensitivity training for corporation personnel. Teacher training included four-day seminars described as “evangelical” and almost “cult-like” in their approach, encouraging teachers “to share soul-searching experiences on . . . assumptions they bring to classrooms that may impede [student] performances.” Seminar leaders urged teachers to change their attitudes about intelligence and, according to the institute, 90% of teachers emerge from the seminars “accepting that intelligence is developed, not innate.”

Howard claims that the poor school performance of African-American and other minority groups is the result of low teacher expectations. “American educators,” he claims, “are . . . paid to decide who can learn at high levels, and who cannot. Norm-referenced tests declare half our children below average by age seven. Ability grouping is the next logical step; we segregate those we believe to be smart and confer on them exclusive access to rich and

challenging curricula. A large percentage of the others, especially in urban settings, are . . . sorted out of math, science and other rigorous subjects because there is no expectation that they are up to the level of learning required.”

Adopted in Tacoma, Washington, in the early 1990s and in many New York City schools in 1996, the efficacy concept produced a 6.4% year-to-year improvement in achievement test scores of eight-year-olds in Detroit public schools during the 1993–94 school year, according to an Efficacy Institute study. The study was ridiculed, however, by critics who pointed out that efficacy teachers concentrated on “TEACHING THE TEST” and that students were unable to repeat those gains on national tests. Called a “pop-psychology movement” by some critics, the efficacy concept fails to take into account the effects of preschool and non-school environment on academic achievement. While critical of teachers, Howard fails to address the learning difficulties of African-American students who begin school illiterate and innumerate—two or more years behind students from economically advantaged communities. Many come from socially, educationally and economically dysfunctional, single-parent families in dysfunctional, anarchic, poverty-stricken neighborhoods, where crime, drugs, premature teenage sexual activity and violence have far greater impact on a child’s ability to learn in school than teacher expectations. As former Assistant Secretary of Education Chester E. Finn, Jr., put it: “Expectations alone don’t yield learning. Successful education also demands . . . [that] the rest of one’s life is in decent enough shape that one can concentrate [on learning].”

eight-four plan The traditional organization of elementary and secondary education in public schools during the first half of the 20th century. Still used in some rural areas, the plan divides childhood education into eight years of

primary school and four years of high school, with each group housed in separate buildings, with separate administrations, staffs and faculties. After World War II, the eight-four plan gave way to 6-2-4 and 6-3-3 plans as population growth forced the construction of separate two- or three-year JUNIOR HIGH SCHOOLS to accommodate the burgeoning student population and to meet the special developmental and instructional needs of early adolescents. Although not included in the numerical title of the various organizational plans, kindergarten is an implicit element of primary school organization.

Eight-Year Study A longitudinal research project started in 1933 by the PROGRESSIVE EDUCATION ASSOCIATION showing that 1,475 graduates from 300 innovative “progressive” schools scored significantly higher academically and socially in college than a group of students from traditional secondary schools who had been matched in every way with the progressive school group. At the time, progressive schools were under attack from conservative educators for failing to impose strict, traditional discipline on students.

Eisenhower, Dwight D. (1890–1969) Thirty-fourth president of the United States (1954–60), whose use of federal troops to enforce the 1954 decision of the U.S. Supreme Court in *BROWN V. BOARD OF EDUCATION OF TOPEKA* marked a turning point in the struggle to end racial segregation of public schools. Although Eisenhower had hoped the South would gradually desegregate schools without prodding from Washington, Governor Orval E. Faubus of Arkansas refused to conform. After the Little Rock school board had adopted a school desegregation plan, Faubus ordered the national guard to prevent nine black students from entering Central High School. When a federal court ordered Faubus to stop interfering, Faubus removed the troops, but their pres-

ence had attracted mobs of white supremacists who threatened the safety of the black students. After the school sent the children home in police cars, Eisenhower moved to prevent mobs from undermining federal court orders by federalizing the Arkansas National Guard and sending units of the 101st Airborne Division to Little Rock to disperse the mobs and ensure the children’s safe entry at school.

(See also *COOPER V. AARON* and *AARON V. MCKINLEY*.)

elective courses Any one-semester or full-year courses not required for graduation and in which students enroll on their own initiative. There are two types of elective courses, restricted electives and free electives. Restricted electives represent a group of courses from which one or more, but not all, must be selected to meet graduation requirements. At the college level, for example, a department might offer 20 courses in a subject and require that all students majoring in the subject complete at least 10. Each student is then free to select any 10 from the list of 20. Free electives, on the other hand, represent any course not required for graduation that the student elects to study out of sheer interest, to broaden his or her education.

electric chalkboard A device that projects images from transparencies onto screens in the front of the classroom and allows the teacher to write directly on the transparency with a grease pencil or felt-tip pen, while the writing is projected in enlarged form. In the early 2000s, electric chalkboards were gradually being replaced by INTERACTIVE WHITEBOARDS, linked to computer networks and able to display a wide variety of computer-generated materials, including handwritten materials from electronic notepads.

Elementary and Secondary Education Act of 1965 (ESEA) An all-embracing, six-part

federal law to improve American public school education by direct federal intervention. A central element of President Lyndon B. Johnson's WAR ON POVERTY, ESEA had six major goals, each of which was described in a separate section or "title."

Title I was the most far-reaching in that it provided funds to local educational agencies (LEAs), including schools, social service agencies and other organizations for such programs as remedial reading, compensatory mathematics and special programs. Funds were apportioned according to the number of low-income children in the LEA's area. By 2005, Title I was providing almost \$15 billion worth of federal funds to almost 10 million children.

Title II provided funds for school libraries and for textbooks in public and private schools (see *BOARD OF EDUCATION OF CENTRAL SCHOOL DISTRICT V. ALLEN*), Title III provided grants and funds for innovative educational programs and Title IV provided funds for educational research and training. Title V provided funds to state educational agencies and Title VI provided funds for ESEA administration.

In 1968, Congress amended the act to include bilingual education and extend its reach to handicapped children and migrant children and to guarantee non-English-speaking children the right to study in their native languages while they learned English. In 1970, Congress learned that local communities were misusing Title I funds to construct swimming pools and make other capital improvements, and it altered the law to require state and local governments to provide matching funds for all federal funds received. In 1972, Congress amended the act to ban GENDER DISCRIMINATION, and four years later it extended the reach of the original legislation to vocational education, higher education and a variety of other programs. In 1978, Congress made its first intrusion into state control of the classroom by

adding a comprehensive basic skills program to ESEA to improve pupil achievement.

In 1993, President Clinton amended ESEA with the Improving America's Schools Act, which tied federal aid to the development of standards by each state to assess all students and ensure that schools make "adequate yearly progress" in improving education standards. A year later, Congress further extended the reach of the original act to include education of the severely handicapped and American Indians.

It was in 2001, however, that Congress imposed the most far-reaching federal controls on American public school education. Signed into law by President George W. Bush in 2002, the \$10 billion NO CHILD LEFT BEHIND ACT OF 2001 (NCLB) amended ESEA by imposing testing requirements on all states and public school districts and requiring every school to demonstrate year-to-year improvements in academic performance—or face loss of federal subsidies. Aimed especially at schools with disadvantaged children, NCLB allows parents in failing public schools to transfer their children to other schools or charter schools, and it allows states to replace the curricula and staffs of schools that make no academic progress for four consecutive years. The long-term NCLB scheme called for spending \$1 billion a year on reading programs built on an agenda called READING FIRST, under which K-3 teachers and reading coaches across the nation are being retrained to use research-based teaching methods designed especially for disadvantaged children. To continue receiving grants, reading instruction programs must show progress in student reading proficiency within two years. But by 2007, nearly 30% of the nearly 62,000 schools that reported had failed to make "adequate yearly progress," thus converting NCLB into one of the most controversial new elements of ESEA. With student academic proficiency ranging from well above national norms in northeastern states such as Massachusetts, New Hamp-

shire and Vermont to abysmally low levels in states such as Hawaii, New Mexico and Mississippi, educators across the nation had long called for establishing minimum national academic standards. Constitutionalists, however, cite the Tenth Amendment of the Constitution, which leaves to the states all powers not expressly conveyed to the federal government by the first nine amendments. The word education does not appear in any of those amendments and has therefore always fallen under state purview.

With the acceptance of federal grants to education, however, school districts have, for many years, tacitly accepted the conditions that come attached to any loan or grant in aid. Indeed, the federal government now provides about \$55 billion, or 10%, of what states and local districts spend on public elementary and secondary education, leaving states with little choice but to accept the conditions of NCLB or forfeit federal aid. A small number of school districts have done just that—in Connecticut, Illinois, Vermont and Virginia, among others. Some states challenged the law on the basis that the federal government underestimated the costs of administering the law and forces states and local school districts to spend local tax dollars to enforce a federal law. A federal court rejected the challenge on the grounds that the states and local districts had the option of withdrawing from NCLB (and, of course, forfeiting federal aid). Some districts, however, have developed ways to pervert the intent of NCLB by transferring the lowest achievers from failing public schools into CHARTER SCHOOLS, which are not covered by NCLB restraints. By shedding their poorest achievers, the public schools can then demonstrate the year-to-year gains in overall academic achievement required to obtain hefty NCLB grants.

elementary certificate A special certificate issued by the Dalcroze School of Music in New

York City, that certifies that a teacher has completed training for and is eligible to teach music using the DALCROZE METHOD.

elementary school An institution that provides the first four to eight years of a child's formal education, including basic reading, writing and calculating and the basic concepts of science, health and hygiene, technology, history, geography, art, music, crafts and the social sciences. An elementary school may also include a preschool and kindergarten. In contrast to secondary schools, where teachers are specialists in specific subjects, elementary school teachers are generalists, expected to have and to be able to impart a broad knowledge covering each area of instruction. The number of years of instruction in elementary school vary from community to community, depending on the size of the school population. Most American cities and towns have introduced the freestanding junior high school or MIDDLE SCHOOL to provide instruction for grades five, six or seven through grades eight or nine, to ease overcrowding in elementary and high schools and to meet the special needs of early adolescents.

The concept of the elementary school dates back to the late 1840s, when the growth of the student population made teaching all age groups in a single school—often a one-room schoolhouse—impractical, especially in major cities. In 1848, John D. Philbrick (1818–86), head of Boston's Quincy Grammar School, was the first to reorganize the single-class school into separate grades, with teachers for each grade, and a desk for each student, instead of two to a desk. His arrangement led eventually to the construction of separate classrooms for each grade.

Elementary Science Study (ESS) A collection of science kits developed by the EDUCATION DEVELOPMENT CENTER, INC. and containing

materials for students to use in science classes from kindergarten through eighth grade. Developed by a group of scientists, teachers and psychologists in the early 1960s, the kits are designed as an adjunct to the formal curriculum. The kits contain materials appropriate for study and observation by each age group, and from which they can make independent discoveries and draw conclusions.

Eliot, Charles W. (1834–1926) American educator who transformed tiny HARVARD COLLEGE into the foremost American university of its day and a model for every other U.S. institution of higher learning. Often called the “founder of Harvard University,” he was born to a wealthy Boston family with close ties to Harvard (his father served as treasurer from 1843 to 1853). Eliot earned his Harvard B.A. in 1853, his M.A. in 1856 and was an assistant professor of mathematics and chemistry there until 1863. After failing to win a promotion, he went to study in Europe for two years. In 1865, he was appointed professor of chemistry at the newly established MASSACHUSETTS INSTITUTE OF TECHNOLOGY. In 1869, the *Atlantic Monthly* published two of his articles, both entitled “The New University,” in which he cajoled the academic world to cease imitating British and European educational models and develop its own uniquely American institutions.

“When the American university appears,” he wrote, “it will not be a copy of foreign institutions . . . but the slow and natural outgrowth of American social and political habits, and an expression of the average aims and ambitions of the better-educated classes. The American college is an institution without parallel; the American university will be equally original.” The articles shook the world of education and earned him the presidency of Harvard College.

When Eliot took over Harvard, it was a small, provincial college with a curriculum that had changed little over the previous century.

Latin, Greek, mathematics, philosophy, history, physics, chemistry, French and German made up its core subjects. In addition to the college, Harvard had four graduate schools that were as archaic as the college. The law school granted an LL.B. to any student who completed its 18-month course of study; no examinations were required. The medical school granted an M.D. to all students who completed two terms of study, served an apprenticeship with a practicing physician and passed 10-minute oral exams in five of nine principal subjects. Harvard also had a scientific school that admitted and graduated all who applied and a Unitarian divinity school that granted no formal degree.

When Eliot was inaugurated in 1869, Harvard was torn by dissent and feuding between reform-minded faculty and traditionalists. In his inaugural address Eliot left no doubt where he stood. His work was swift and dramatic. He broadened the undergraduate liberal arts curriculum and merged the scientific school into the undergraduate college. In 1872, he established a Graduate Department (later the Graduate School of Arts), which granted master's degrees and doctorates. The law, medical and divinity schools were reorganized as proper graduate schools, with sequential curricula requiring extensive written examinations. He opened the divinity school to students of all Protestant sects. He gave students the right to take elective courses, and in 1879 he approved limited faculty instruction of women and the eventual founding of the Society for the Collegiate Instruction of Women. Better known as the “Harvard Annex,” it became Radcliffe College in 1894. He also raised faculty salaries to levels competitive with private industry and recruited and lured the foremost national and international scholars to teach full-time.

After 25 years, Eliot had succeeded in creating the model of the modern American university and made Harvard the most widely acclaimed institution of higher learning in the

United States and, in the opinion of many, the world. It taught all the world's great languages, literature and history; it taught all the social sciences, along with the development and functioning of all major human institutions, and it taught the range of human knowledge about nature and science. Eliot hired the finest scholars in the world to impart that knowledge to carefully screened young men who would benefit most from the experience. Harvard became a center of research and developer of new knowledge as well as a repository of existing knowledge, and it exerted a broad influence on the nation by graduating more than its share of national leaders in virtually every sector of American life.

In addition to his impact on Harvard and higher education, Eliot had a far-reaching impact on American education generally. A Republican-turned-Democrat, he believed strongly that universal education was the primary vehicle for the talented to succeed and that education was essential to the preservation of democracy. He defined education as "progressive acquisition of an elementary knowledge" of five broad areas: the external world—that is, nature, geography, meteorology, botany and zoology; the story of humanity, including "the immense product of the imagination in art and literature"; manual and moral training—occupational skills, along with patience, good judgment and the recognition of the value of productive labor; character training; and training in democracy, by which he meant the "great truths which lie at the foundation of democratic social theory." He defined the latter as the interdependence of individuals, national unity, as well as the need for the "rising tide" of immigrants to be Americanized (see AMERICANIZATION), and service to others and respect for expertise in every area.

During his 40-year tenure at Harvard, he also served as president of the NATIONAL EDUCATION ASSOCIATION and was chairman of the

NEA's Committee of Ten, whose 1893 report standardized secondary school curricula to prepare high school graduates for college-level studies. The report also resulted in the introduction of foreign languages, higher-level mathematics and science courses into the secondary school curriculum.

After his retirement in 1909, Eliot edited the famed "Five-Foot Shelf" of Harvard Classics and Junior Classics, consisting of some 50 volumes he selected as containing a body of knowledge equivalent to a good liberal education. It included works by Homer, Plato, Plutarch, Virgil, Benjamin Franklin, Adam Smith, Charles Darwin, Michael Faraday and Louis Pasteur, as well as classics from literature, history, mathematics and other realms of knowledge. At a time when only 10% of American children enrolled in high school, the Five-Foot Shelf became a runaway best-seller, according to its publisher, Collier, which claimed to have sold 350,000 sets, or 17,500,000 volumes. A prolific writer of magazine articles and books, he was a counsel to virtually every other university president in the United States, a counsel to American presidents and a frequent counsel to congressional committees. Although he was the most important educational visionary of his era, Eliot's vision was clouded by his conception of higher education and universities as reserved for the "better-educated classes," which he defined as white men of Anglo-Saxon Protestant origins. Although his transformation of Harvard encouraged almost every major college to expand into Harvard-type universities, it also led to more than five decades of discrimination which saw virtually every major private university, including Harvard, all but refuse entry to women and blacks and tightly restrict entry to Jews and Catholics.

(See also GREAT BOOKS PROGRAM.)

Eliot, John (1604–1690) English-born minister, teacher and missionary, who emigrated

to New England in 1631. A graduate of Cambridge University, he became pastor of the Boston Puritan Church, a post he held for 56 years. In 1642, he became an overseer (board member) of HARVARD COLLEGE and, in 1645, founded the Roxbury Latin School. In 1642, his concern over the "heathen ways" of the Indians in the area took him to Nonantum (now Newton) to preach. His oratorical skills brought him invitations from the heads of other Indian villages, and by 1651, after a visit to an Indian village at Concord, he was persuaded that Indians would only be able to become true Christians by adopting the English way of life.

Two years earlier, having heard of Eliot's good work among the Indians, Parliament had created the COMPANY FOR THE PROPAGACION OF THE GOSPELL IN NEW ENGLAND, a charitable organization to which Oliver Cromwell himself contributed. In 1651, Eliot used society funds to acquire 2,000 acres along the Charles River, 18 miles from Boston, and founded the first "praying town," Natick, to which Indian converts could move and adopt an English way of life. Over the next 14 years, he founded 12 more, each with carefully laid-out streets, a house and farm lot for each Indian family, and a meetinghouse for prayer and education. He trained Indian teachers, established freestanding schools and, in 1666, wrote an Indian language grammar book and primer. Between 1653 and 1663, he translated the Catechism, New Testament, Old Testament and a Psalter into Algonquian. He continued to teach, preach to and care for the Indians in praying towns until his death. Having convinced his fellow colonists of the necessity of converting Indians to Christianity, he attempted to do the same for Africans. He warned slaveholders not to "imagine that the Almighty God made so many thousands of reasonable creatures for nothing but to serve the lists of Epicures or the gains of mammonists." His appeal failed.

emancipated minor A legal status granted by some states and conferring full adult status (except the right to vote) to minors who can demonstrate they can support themselves and live independently of their parents or other adult guardians. The age varies from state to state, usually depending on the age at which compulsory education is no longer required.

The concept was developed to reduce state and community costs of caring for and housing neglected or abandoned minors whose age and maturity were such that they could care for themselves. It has, however, proved costly to both the federal and state governments and some public school districts, as minors have moved from their parents' homes, established independent residencies and, by declaring themselves emancipated, relieved their parents of all financial responsibility for their education. As a low-income emancipated minor, a college applicant is eligible for grants and scholarship awards to which his combined family income might not entitle him. Moreover, an emancipated minor establishing residency in another state may be entitled to free or reduced tuition available only to in-state residents. An emancipated minor can also establish residency in a different, perhaps superior public school district, which would have no way of obtaining tax funds to cover costs of the child's education.

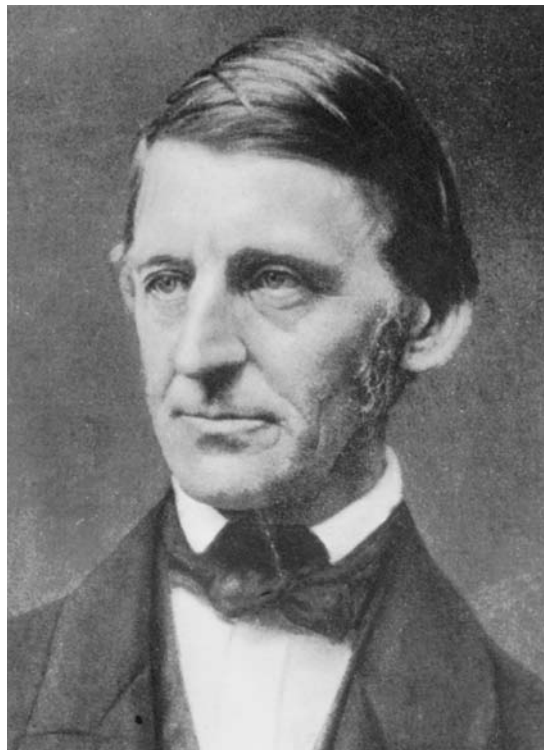
Emerson, Joseph (1777–1833) American clergyman and first educator to expand women's academic education beyond the traditional "ornamental" and "domestic" arts. Born in New Hampshire to a long line of clergymen, he graduated from Harvard in 1801 and served as a minister in Beverly, Massachusetts, until ill-health forced his retirement in 1816.

Apparently sympathetic to the women's rights movement that emerged following the publication in 1792 of Mary Wollstonecraft's widely read *Vindication of the Rights of Woman*,

Emerson opened a secondary school for young women in Byfield, Massachusetts. From its beginnings, the Byfield Female Seminary attracted students from the most cultured New England families, offering them extensive studies in literature, history and other academic subjects that had been previously reserved for men. Among the young women he educated and influenced deeply were ZILPAH POLLY GRANT, CATHERINE BEECHER and MARY LYON, who would go on to pioneer equal educational rights for women and open the teaching profession to women.

Emerson, Ralph Waldo (1803–1882) American philosopher, author, scholar and “public teacher,” who used his oratorical skills to “educate” Americans in public lectures. A graduate of Harvard, Emerson spent several unhappy years as a schoolmaster before attending and spending several more, equally unhappy years as pastor of the Second (Unitarian) Church of Boston. In 1832, he resigned and went to Europe, traveling through Italy, France and Britain and meeting the likes of Samuel Taylor Coleridge, William Wordsworth, John Stuart Mill and Thomas Carlyle. Their influence convinced him to return to the United States the following year and assume the role of “scholar,” which he defined as “delegated intellect” of all men everywhere and a combination of philosopher, prophet, poet, critic, seer and public teacher. As such, it would be his role not just to impart knowledge but to continue discovering it through self-education in three spheres: nature, poetry and literature, and action.

In 1834, he moved to Concord, Massachusetts, where he spent the rest of life writing and making forays to Boston and elsewhere to lecture. In 1837, his Phi Beta Kappa address at Harvard electrified his listeners but produced a storm of controversy in the academic world and church by calling for intellectual indepen-



Ralph Waldo Emerson (*Library of Congress*)

dence from the church and academic traditions of Britain and Europe. He charged both institutions with using education to enslave their charges rather than as a means of freeing them to achieve their greatest potential. He urged his audience to search out their own knowledge and truths through self-education. Emerson’s words and writing influenced an entire generation of educators and thinkers, including Harvard University president CHARLES W. ELIOT, poet Walt Whitman and others who, in turn, would change the course of American education and letters.

emotional disturbance A vague, often meaningless catchall of behavioral symptoms that can have severe legal and educational

consequences for exceptional children. Students labelled emotionally disturbed are often subject to segregation in separate classes and to other forms of special treatment at school that may not only be unneeded, but may actually be harmful because of the humiliation of being set apart from one's peers. With no specific definition for the term, it can often lead to harsh conflicts between teachers, school administrators, psychologists and parents. In general, many teachers and administrators tend to label as emotionally disturbed children who consistently disrupt school routine or who lack motivation. Many normal children or frustrated, learning-disabled students may periodically exhibit such symptoms. Similar symptoms may result from trauma, cultural differences and individual differences in rates of development. The term emotionally disturbed should not be confused with seriously emotionally disturbed, which is a specific term referring to children unable to function without the care of a mental-health professional and/or medication. Serious emotional disturbance is far more evident and easy to diagnose than the vague term *emotionally disturbed*, which, at times, may simply reflect an inexplicable antipathy between a student and a particular teacher.

employment and education The relationship between the number of years of formal schooling and unemployment rates and earnings. In the decades since World War II, if 10% of those who completed high school are unemployed, the rate of unemployment will average 16.7% for persons with eight years or less education; 21.1% for persons who dropped out of high school and have at least eight but less than 12 years of formal education; 7.7% for persons with one to three years of college and 4.3% those with four or more years of college. Decades of unprecedented prosperity in the United States produced a new mix of statistics by the beginning of the

21st century, however, when unemployment rates dropped into a historically low range of 4% to 6%. Demand for labor—unskilled as well as skilled—even sent unemployment rates for the often unemployable workers without high school diplomas down to less than 7%, while unemployment fell to 5.5% for workers with high school diplomas but no college and 4.8% for workers with some college but no degrees. Only 4% of workers with associate degrees and 3.1% of workers with bachelor's degrees were unemployed.

On the earnings side, for every \$10,000 of earnings for persons who have completed four years of high school, persons with eight years or fewer of schooling could historically expect to earn only \$6,688; persons with one to three years of high school, \$7,877; persons with one to three years of college, \$12,133; persons with four years of college, \$15,294; and persons with five years or more of higher education, \$18,423. Again, the unprecedented prosperity of the 1990s skewed historic comparisons. By 2002, demand for workers had sent the median income of men with less than a ninth-grade education soaring to more than \$21,000. Women with the same education earned about \$17,000, or 19% less. The median annual income for men with some high school education but no diploma was more than \$26,000; similarly educated women earned \$19,000, or about 27% less. High school graduates earned median incomes of \$35,000 if they were men and \$25,300 if they were women—a 27.7% differential. Some college but no degree sent the median income of men to more than \$41,000 a year and that of women to about \$30,500—a 25.6% differential. With associate degrees, men commanded a median income of nearly \$43,000; women just over \$32,000, or 25.6% less. With bachelor's degrees, men earned a median of \$56,000; women, \$41,000, or nearly 27% less. With master's degrees, men earned a median income of \$71,000; women,

\$51,000, or more than 28% less. With professional degrees, men earned \$100,000; women, \$62,000, or 38% less. And with doctorates in nonprofessional (usually academic) areas, men earned a median income of \$87,000; women, \$62,000, or nearly 29% less.

(See also GENDER DISCRIMINATION.)

encyclopedia A published, alphabetized reference work containing information either on all branches of knowledge (a general encyclopedia) or in a specialized area of knowledge, as in the *Encyclopedia of American Education*. Derived from the Greek *enkyklios paideia*, which might be translated as “a circle of learning,” or “range of education,” the concept of the encyclopedia is believed to date from the fourth century B.C. when the Greek philosopher Speusippus (407?–339 B.C.), a disciple and nephew of Plato, is said to have compiled the first such work. Subsequent encyclopedias appeared in ancient Rome, medieval Spain and France and, finally, in 1559, in Germany, when Paul Scalich became the first compiler to attach the word *encyclopaedia* to such a work. A product of the Enlightenment, the modern encyclopedia developed during the 18th and 19th centuries was designed to be read from beginning to end in lieu of a formal education. Indeed, when the *Encyclopaedia Britannica* was first published in Edinburgh in 1768, it was issued in 100 weekly monographs, which subscribers could then bind. The first American encyclopedia, the 30-volume *Encyclopedia Americana*, was the work of German-American educator Francis Lieber (1800–72), who compiled it in 1829. The first encyclopedias specifically compiled for children were the 22-volume *World Book Encyclopedia* in 1917 and the 15-volume *Compton's Pictured Encyclopedia* in 1922. In recent years, printed encyclopedias have started disappearing from student bookshelves, as encyclopedia publishers have compressed their works on compact disks that not only contain the entire

printed contents of the encyclopedia, but integrate text with sound, pictures and animation.

endowment A fund of capital which usually may not be spent but the interest income from which may be used to pay for current expenses. Endowment funds may be restricted or unrestricted, depending on the terms laid down by fund donors. Thus, the use of income from some endowment gifts may be restricted to scholarship grants for students; others to pay the salary of a particular faculty chair; and others to the purchase of books for a library. Unrestricted gifts allow the institution to spend income from the endowment as it sees fit. On average, about 45% of endowment funds are unrestricted and 55% restricted.

Income from endowment funds varies widely from year to year, depending on investment choices by fund managers and financial-market trends. With notable exceptions in Texas and California, public institutions of higher learning have negligible endowments on average and seldom derive more than 1% of their revenues from such funds. Private institutions, on the other hand, have endowment funds ranging into the billions of dollars, and returns in recent years ranged from negative levels (losses) of 5% or more to between 9% and 14%. Despite the high growth rates and income of the funds, fund managers withdraw less than 5% a year on average and are exempt from the law requiring FOUNDATIONS to spend at least 5% of their earnings each year. Indeed, the wealthiest colleges such as Harvard and Yale have come under increasing criticism for continually increasing tuition and student fees—to about \$45,000 in both instances—while reinvesting and hoarding endowment income and paying its investment managers in the most extravagant manner. Harvard paid its fund managers a total of \$75 million to \$110 million a year during the mid-2000s, based on the annual gains they produced for the fund—

an average of more than 16% a year from 1995 to 2005. In response to criticisms, Harvard now uses more than \$930 million of its endowment income to cover about one-third of its operating budget, including financial aid programs that allow the university to admit qualified students regardless of their ability to pay. Although institutions of higher education collect about 10% of all U.S. charitable gifts on average, many fail to disburse much of those donations and, in some cases, misdirect contributor funds to purposes other than those for which the donations were intended (see *ROBERTSON V. PRINCETON*). Of the 400 largest U.S. recipients of charitable donations, 126 are colleges and universities, led by Harvard and Stanford, that receive individual gifts of at least \$1 million a year. Indeed, half of all gifts over \$1 million go to institutions of higher education, which nonetheless continue raising costs of tuition at rates that exceed the rate of inflation. Many alumni have condemned the incongruities of endowment management, and the percentage of alumni-giving has fallen steadily, reaching a low of 12.8% in 2004—especially after the F. W. Olin Foundation disbursed its last \$460 million to found an engineering college, the Franklin W. Olin College of Engineering in Needham, Massachusetts, and offer all its 300 students tuition-free education with an untenured faculty. A few of the most richly endowed colleges took hesitant steps in response: In 2004, Harvard waived financial contributions from families earning less than \$40,000 a year—so minuscule a percentage of the families with undergraduate children at Harvard that the institution raised the family income figure to \$60,000. Yale did the same for families earning less than \$45,000 a year, and Princeton replaced STUDENT LOANS with outright scholarships and grants for students from families with annual incomes of less than \$46,500. Columbia University, Brown University, University of Pennsylvania, Stanford University,

and Massachusetts Institute of Technology, among others, have taken similar steps. The average college student in America graduates about \$20,000 in debt to pay for his or her college education.

In 2006, 62 colleges and universities had endowments of more than \$1 billion: HARVARD UNIVERSITY'S was by far the largest, at more than \$28.9 billion at the end of 2006. Only four other institutions boasted endowments of more than \$10 billion in fiscal 2006: Yale University, with just over \$18 billion; Stanford University, with \$14.1 billion; the University of Texas system with just over \$13.2 billion; and Princeton University, with just over \$13 billion. The next five largest endowments in 2006 were those of Massachusetts Institute of Technology (nearly \$8.4 billion), Columbia University (more than \$5.9 billion), University of California system (more than \$5.7 billion), University of Michigan (\$5.65 billion), and Texas A&M University and its related foundations (\$5.64 billion). The 2006 values of the top 10 college endowment funds represented year-to-year increases ranging from 9.8%, for University of California, to 24.7% for MIT.

On average, colleges and universities invest just under half their endowment funds in U.S. equities, with about 20% in U.S. government and corporate bonds, 10% in foreign equities and 10% in alternative investments such as hedge funds. They retain less than 5% in cash and, somewhat surprisingly, invest less than 3% in real estate. Despite high rates of growth and rates of return, college endowment funds pay out less than 5% of their annual income.

Engel v. Vitale A 1962 decision by the U.S. Supreme Court declaring unconstitutional a New York State law giving public school officials the option to mandate a daily nondenominational prayer in school. The landmark ruling was the first of a battery of court decisions that would strike down efforts by officials in dozens

of states to compel daily Bible reading and prayer in public schools. Indeed, the following year, the Court ruled such laws in Pennsylvania and Maryland to be a violation of the Establishment Clause of the Constitution. None of these rulings declared prayer in public schools to be unconstitutional, however. Rather, the court only struck down government-mandated or required programs of prayer and Bible reading. Indeed, voluntary, individual student prayers are still legal in public schools—so long as such prayers are conducted apart from the student body and out of the classroom and other public areas, where other students might interpret such activity as a form of direct or indirect coercion to participate.

(See also CHURCH-STATE CONFLICTS.)

engineered classroom A carefully structured classroom layout that segregates individual or small groups of students into specific areas, where their behavior can be carefully controlled and from which they are unable to contact or disrupt activities in other areas. Designed originally for emotionally disturbed children, the approach has been modified to some extent and is not an uncommon layout in almost all classrooms for young children, whose energy can be more easily channeled into learning activities. The original engineered classrooms were divided into three basic areas: a mastery center, for mastering basic reading, writing and arithmetic skills; an exploratory center, where children studied science and art; and an order center, where teachers focused on behavioral learning, such as paying attention, responding to directions and social conduct.

By limiting time spent in each section to about 15 minutes and moving the children from section to section throughout the day, the engineered classroom provides highly structured situations where the number of tasks the child is expected to perform are limited, thus making it easier for the child to develop self-control.

engineering A field of study that applies mathematics and the empirical sciences to the efficient use of materials and the forces of nature. Although the term usually refers to a profession requiring various levels of higher education, engineering, in the broadest sense, can also refer to a variety of craftsmen, tradesmen and para-professionals, such as marine engineers or locomotive engineers, who only need to serve an apprenticeship or obtain a two-year associate degree or certificate before entering the trade.

At the professional level, however, engineering requires at least a four-year college degree and, often, a master's degree or doctorate. Originally concerned primarily with construction, modern engineering was an outgrowth of the industrial revolution. The fields of engineering study offered by the more than 300 engineering schools in the United States include aeronautical, aerospace, chemical, civil (construction), electrical, electronics, geological and mining, industrial or management, mechanical, military, naval or marine, nuclear, safety and sanitary engineering—many with their own subspecialties such as the communications, control and computer engineering subspecialties of electrical and electronics engineering.

Prior to the 19th century, engineers learned their skills as apprentices. As a profession requiring formal study, engineering in the United States dates back to 1802 and the founding of the UNITED STATES MILITARY ACADEMY at West Point, New York. Although West Point was established to train officers for the armed services, it also trained the vast majority of American engineers who had not emerged from traditional apprenticeship programs. Most of their work was limited to building fortifications and other military installations, however, and a growing need for engineers to work on civilian projects led to the founding of the RENSSELAER (now, Polytechnic) INSTITUTE in Troy, New York. Both West Point and RPI introduced advanced mathematics, chemistry,

physics and engineering, as well as laboratory instruction into their curricula, which served as models for other institutions of higher learning shortly after the Civil War.

In the years following World War II, the engineering curricula at most undergraduate engineering schools started with two years each of physics, chemistry and mathematics, but then branched off into specialized studies of aerospace, chemical, civil, mechanical or electrical engineering. The development of electronics during the 1970s and 1980s, however, so blurred the differences between engineering specialties that many engineering schools were forced to revamp their curricula to provide their slightly more than 100,000 students with the newer, more inclusive skills that industry required. Thus, in 1994 the University of California at Berkeley introduced a new four-year "mechatronics" program that merged traditionally separate mechanical and electrical engineering. The aerospace department of the MASSACHUSETTS INSTITUTE OF TECHNOLOGY combined structural and propulsion engineering with new courses in statistics and computer science designed for engineering managers. Carnegie Mellon University merged electrical and computer engineering, while Cornell University created a combined civil engineering and geotechnical program and the University of Michigan introduced a new master's degree program that combined engineering and business administration to teach management skills to engineers. Stanford University also mixed business school management and budgeting courses in its engineering program. And dozens of engineering schools ended the age-old practice of forcing first- and second-year students to take a specific number of math and science courses during their first two years of college. Instead, they blended the necessary math and science instruction into their engineering courses, thus allowing students to learn calculus or chemistry in the context of engi-

neering problems instead of requiring them to recall such concepts from earlier courses.

Engineering Concepts Curriculum Project (ECCP) An innovative course designed in 1963 by the Commission on Engineering Education to teach high school students the basics of engineering and encourage them to consider the field as a future profession. Eventually called *The Man-Made World*, the aims of the course were to develop student technical literacy and show how technology and applied mathematics had benefitted society. Put together by a group of secondary school science teachers, engineers, college professors and scientists, *The Man-Made World* was divided into three parts: Logic and Computers, Models and Measurement, and Energy and Control. Funded by the NATIONAL SCIENCE FOUNDATION and such corporations as Exxon, U.S. Steel and McGraw-Hill Publishing Co., the course provided schools with appropriate textbooks, teacher manuals, tests, film strips, transparencies, audiotapes, games and laboratory equipment. Administered by an ECCP staff at the State University of New York at Stony Brook, the course was a precursor of the technology courses that subsequently permeated the elementary and secondary school science curricula across the United States.

English The primary language of the United States and a basic, required element of formal education, from kindergarten through high school. English instruction consists of seven basic elements: speaking (rhetoric), READING, SPELLING, WRITING, GRAMMAR, COMPOSITION and literature. Most American-born children of English-speaking parents have a vocabulary of 1,000 words or more by the time they are three years old and ready for preschool. Most have limited reading skills by the time they finish kindergarten. In the early grades of elementary school, students learn to read and to comprehend the main ideas in a written work of appro-

priate children's literature. During the early elementary school years, children also learn to write standard English sentences, with correct structure, verb forms, syntax, punctuation, word choice and spelling. The early elementary school years also teach students to organize their thoughts and present them orally as well as on paper in logical, understandable sequence. As students master basic reading, writing, spelling and grammar and progress into secondary school, the emphasis in English studies gradually shifts to advanced compositional skills and the reading, interpreting and understanding of increasingly complex literature.

English as a second language (ESL) One of two basic approaches to teaching English to non-English-speaking students in American public schools, without interrupting the normal school curriculum. ESL uses the IMMERSION technique, which limits all classroom language to English during the entire school day. Instead of translating words that students do not understand or allowing students to use words of their native language, teachers trained in ESL use demonstration, charades, drawings and other graphic and dramatic techniques to convey the meaning of English words.

ESL is an outgrowth of the Bilingual Education Act of 1974, which amended the ELEMENTARY AND SECONDARY EDUCATION ACT OF 1965 to establish programs of bilingual education for "children of limited English-speaking ability in elementary or secondary schools." At the time, the total number of U.S. residents five years old or older speaking a language other than English at home was less than 20 million. By 1980, the total had reached more than 23 million, and, by the end of the century, it had climbed to 26 million, or nearly 10% of the U.S. population. At the beginning of 1998, limited-English students made up more than 6% of the total elementary and secondary school student population in the United States. California accounted for 40% of

the nation's 3.5 million non-English-speaking students, with about 1.4 million—about 25% of the state's school population. Texas harbored about 457,000, New York, 236,000, Florida, 154,000 and Illinois, 107,800.

Adding to the non-English-speaking population was a flood tide of illegal immigrants—more than 11 million by 2007, according to U.S. Office of Immigration estimates. Their arrival added about 1 million school-age children. About 60% of the illegals had crowded into four states—California (2.2 million), Texas (1 million), New York (500,000) and Illinois (450,000). Under a 1982 Supreme Court ruling in *PLYLER V. DOE*, all children in the United States are entitled to free elementary and secondary school education, regardless of place of birth or immigration status. By 2000, the states were spending a total of about \$3.5 billion a year to educate non-English-speaking children, which included legal as well as illegal immigrants. The U.S. Department of Education subsidizes state bilingual education with about \$400 million.

The programs authorized by the Bilingual Education Act were to include instruction in English; but all the rest of the child's instruction "in all courses and/or subjects of study" was to be in his or her native language "to the extent necessary to allow a child to progress effectively through the educational system. . . ." Two methods of bilingual instruction have emerged: the native language method, in which basic academic skills are taught in the student's native language and eventually retaught in English, and ESL, which immerses students in English, allowing them to listen and speak nothing but English.

English schools A type of colonial American primary school whose curriculum was a precursor of the modern curriculum stressing reading, spelling, writing, arithmetic, geography and history, rather than religious instruction. Usually housed in a small, one-room

schoolhouse, English schools enrolled children from two or three to 14 years old, with the older children studying Latin, Greek, geometry, algebra and trigonometry. In more populated areas, English schools evolved into age-differentiated units, with a primary division teaching students five or six years old for two or three years, and an English grammar, or intermediate, school for children from between nine or 10 to 14 years old.

enrichment programs Educational programs that supplement the standard school curriculum to meet the needs of *gifted* or exceptionally talented children. Enrichment programs might include instruction in playing chamber music for gifted music students or special research opportunities for gifted science students. In effect, enrichment programs are designed to encourage student creativity and in-depth study by helping them pursue personal interests and obtain knowledge beyond that available from the standard classroom experience. Although there are many special schools for the talented and gifted, enrichment programs are usually associated with conventional schools.

Beyond the in-school enrichment program, a second type of out-of-school program, also called an enrichment program, helps make culturally deprived preschoolers school-ready by providing them with instruction in reading and other skills they would not learn on their own at home. The most notable preschool enrichment program is HEAD START.

enterprise schools Public schools that are operated and administered by any of a variety of private, profit-making organizations instead of by school administrators hired by local SCHOOL BOARDS. Working under contract with school boards, operators of enterprise schools usually have free rein to administer each school independently of the school board. They imple-

ment their own educational programs, manage their own financial resources and physical plant and can contract for materials and services with whomever they choose. The concept developed in the late 1980s, as some school boards found themselves unable to sustain quality education and operate within budgets provided by public funds, which averaged about \$5,500 per student across the United States. Under some plans, school boards hired outside firms to administer one or more schools over a fixed period of years for a specific annual fee based on the number of students.

A second type of enterprise school program involves the hiring of a management consulting firm for a specific fee to take over the day-to-day operations of the superintendent of schools for a fixed period. The firm has *carte blanche* to implement its own educational programs, streamline operations and finances and make any other improvements in the system it chooses. All savings that accrue from such efficiencies belong to the school district.

(See also EDISON PROJECT; PRIVATIZATION.)

entrepreneurial (proprietary) schools Privately owned, for-profit schools that usually specialize in teaching a craft, skill or trade. An outgrowth of the apprenticeship system, entrepreneurial or "trade" schools number in the thousands, ranging from individually operated storefronts to full-scale schools with classrooms and highly specialized equipment. Open to applicants of all ages, entrepreneurial schools obtain most of their students by advertising. Training is quick and concentrated, with students in some schools ready for the job market in as few as two weeks. In many communities, private trade schools are the only organizations that teach certain trades, such as car repair, barbering or bartending. As such, trade schools often serve as valuable supplements to conventional public vocational schools, and before

the era of universal public education they were often the sole source of education.

During the 17th and 18th centuries, parents often signed contracts for master craftsmen or tradesmen to educate their children (most often boys). Such contracts required the youngster to serve and obey the master in all lawful ways over a fixed period of time. In turn, the master contracted to teach the youngster his craft or trade, provide him with food and clothing and teach him his “letters” and “numbers.” (See also APPRENTICESHIP.)

As the industrial revolution began and shops evolved into factories, some craftsmen trained a dozen or more apprentices in their shops. As demand for skilled workers grew, some master craftsmen converted their training facilities into profitable trade schools, and wherever a demand for workers existed, an entrepreneur-craftsman was certain to establish a school to train them.

The growth of entrepreneurial schools reached its peak in the years following the world wars of the 20th century, when demand for workers exploded. In the 1920s, the Delehanty Institute was training thousands of young men and women to take examinations for the New York City civil service. In the 1950s, the Berlitz School of Languages taught thousands to speak foreign languages in preparation for jobs overseas. In the 1960s, the Katherine Gibbs School trained thousands of young women and men for secretarial and business posts. And in the 1980s, the Ultissima Beauty Schools and others trained men and women for careers as hairstylists and cosmetologists. During periods of prosperity, other types of entrepreneurial schools developed to take advantage of public demand for self-improvement, luxury and recreation. After World War II, the Arthur Murray School of Dancing taught thousands of men and women the pleasures of ballroom dancing. Other schools developed to teach physical fitness, sailing, tennis, golf and a

host of other sports. Another large group of unaccredited “Bible” schools purported to prepare students for the ministry.

Because of the lack of government standards or oversight, training at some entrepreneurial schools can be extremely poor, and there is seldom any guarantee of a job after graduation. Indeed, some graduates are often left at a distinct disadvantage, because entrepreneurial schools offer no academic instruction or remediation and limit training to single-level occupations such as bartending or barbering. Unemployment among entrepreneurial-school graduates is 50% higher than students with comparable training from two-year community colleges and two-thirds higher than graduates of two-year technical institutes.

The lack of government oversight has also permitted unethical and criminal operators to infiltrate the industry. One congressional investigation cited a host of unethical and illegal practices ranging from misrepresentation to prospective students and lack of attention to standards through low (student) completion rates and misuse of federal financial aid programs.

Three-quarters of the students enrolled in entrepreneurial schools had not graduated from high school, and half of those who did have diplomas dropped out of the programs in which they enrolled. Moreover, certificates from many proprietary schools were no guarantee of students’ employability or ability. Indeed, some certificates—those issued by so-called diploma mills—were and are worthless, as academic credentials or credentials for obtaining employment. Although some states ban DIPLOMA MILLS, the absence of federal regulations allow fraudulent diploma mills—often masquerading as “Bible schools”—to issue useless “degrees” in states that either fail to regulate entrepreneurial schools or to insist on their accreditation by recognized accrediting associations.

entry behavior The knowledge, skills and behavioral and emotional characteristics that a student brings when beginning a school or class. A term used largely by educational psychologists, entry behavior may be measured by appropriate tests on the basis of which an appropriate educational program and, if necessary, remediation may be recommended. Using the results from tests measuring exit, or terminal, behavior, psychologists can then determine the effectiveness of the program and possible remediation for the individual.

environmental education The study of man's relationship with his surroundings, including the effects of population, pollution, resource allocation and depletion, conservation, transportation, technology and urban and rural planning. In elementary and secondary schools, environmental education is generally taught as a content area of various science courses, although it may also find its way into social studies, history and geography courses. At the college and graduate school level, it is usually an interdisciplinary subject, taught in conjunction with many of the pure sciences, as well as cartography, conservation, ecology, economics, engineering, forestry, geology, mineralogy, mining and resource management.

Formal environmental education is an outgrowth of the Environmental Education Act of 1970, Congress's response to increased concern over air, water and soil pollution and the deterioration of the nation's environment. The act funded development of model programs that introduced environmental education into school and college curricula. The act called for the government to prepare and distribute appropriate teaching materials to schools and the media and to provide environmental education to teachers, public service workers, community business and labor leaders and government employees. The act also funded the creation of outdoor, ecological study cen-

ters and the development of community education programs.

epilepsy A neurological disorder involving electrical discharges in the brain that provoke a variety of involuntary activities, such as seizures. The latter last from as little as five seconds to a half hour or more, depending on whether the seizures are partial or generalized. (These are also known as petit mal and grand mal, respectively.) Symptoms may vary from nothing more than a brief, barely noticeable, localized convulsion with no loss of consciousness, to a generalized convulsion and loss of consciousness. Drugs are the most common treatment. Epilepsy has no effect on intelligence or ability to function in school, although teachers need to be aware of any epileptics in their classes, as they should be aware of diabetic children or any other student with a chronic disorder.

Epperson v. Arkansas A unanimous U.S. Supreme Court decision in 1968 that declared a 1928 Arkansas law unconstitutional for permitting the teaching of the biblical story of man's creation while banning the teaching of any theory that "mankind ascended or descended from a lower order of animals." Considered a landmark case in the history of religious and academic freedom, the case began after administrators at a Little Rock high school gave tenth grade biology teacher Susan Epperson a new textbook containing Darwin's theory of evolution to use in her class. To use the book violated state law, but failure to use it would have constituted insubordination to school administrators and subjected her to disciplinary proceedings. Joined by the father of two of her students, she challenged the law in state court.

Passed during the fundamentalist religious fervor that had swept the South during the 1920s, the Arkansas law was an adapta-

tion of Tennessee's 1925 Butler Law, which provoked the famous SCOPES "MONKEY TRIAL." In that trial, a teacher was found guilty of violating the state's prohibition against teaching Darwin's theory. Although Tennessee eventually repealed its "monkey law" in 1967, Arkansas did not, and in ruling against Epperson the Arkansas state supreme court held that the law was a "valid exercise of the state's power to specify the curriculum of the public schools." She appealed to the U.S. Supreme Court, which declared it unconstitutional, saying,

There is . . . no doubt that the First Amendment does not permit the State to require that teaching and learning must be tailored to the principles of any religious sect or dogma. . . . This prohibition is absolute. . . .

The State's undoubted right to prescribe the curriculum for its public schools," Justice Abe Fortas wrote for the court, "does not carry with it the right to prohibit, on pain of criminal penalty, the teachings of a scientific theory or doctrine. . . .

The ruling was the foundation of a series of subsequent cases challenging the right of public schools to use science courses as vehicles for teaching religious principles.

Equal Access Act A federal law, inserted into the Education for Economic Security Act as Title VII, guaranteeing equal access to meeting rooms in public secondary schools for all student groups. The law specifically stripped public secondary schools receiving any federal funds from denying the use of such meeting rooms to students because of the religious, political, philosophical or other content of the discussions or speeches presented, so long as such meetings are voluntary and student-initiated and do not interfere with the orderly routine and conduct of the school.

equal employment opportunity The absence of job-market discrimination on the basis of race, color, religion, ethnicity, age, physical handicap and all factors other than the qualifications of the individual for the particular job. Discrimination in the American job market was the rule until June 25, 1941, when President Franklin D. Roosevelt signed an executive order establishing an Office of Production Management Committee on Fair Employment Practice. Designed to ease manpower shortages in the face of imminent war, the committee was responsible for opening previously all-male, all-white work forces to women and blacks at many defense contractors. It was not until 1964, however, that Congress outlawed discrimination in the workplace with passage of the Civil Rights Act. The act created an Equal Employment Opportunity Commission to end discrimination in hiring, promotion, firing, wages, testing, training, apprenticeship and all other workplace functions.

In 1971, the Department of Labor strengthened the law by requiring affirmative-action plans to eliminate discriminatory hiring practices at all firms receiving federal government contracts valued at \$50,000 or more. In 1972, Congress passed an Equal Employment Opportunity Act, which strengthened the authority of the Equal Employment Opportunity Commission and extended antidiscrimination provisions of the CIVIL RIGHTS ACT OF 1964 to cover state and local government workers, employees of public and private employment agencies and employees of labor unions with 15 or more workers. The act thus extended to public school teachers the same guarantees against discrimination that applied to major defense contractors and opened the doors of white schools to African-American teachers, who had previously been largely confined to teaching African-American students. It also widened the doors of education to women, who had largely been confined to work in elementary schools

and were invariably paid less than men with the same qualifications for the same work.

Equity 2000 A program established in 1990 by the COLLEGE ENTRANCE EXAMINATIONS BOARD to eliminate public school TRACKING in mathematics in the United States by the year 2000 and ensure that every student masters mathematics, algebra and geometry. Comparable to the ACCELERATED SCHOOLS PROGRAM, Equity 2000 eliminates the various types of middle school and high school mathematics tracks—consumer math, business math, vocational math and college math. Instead, it teaches all eighth graders prealgebra, all ninth graders algebra and all tenth graders geometry. To avoid boring bright learners and overwhelming slow learners, Equity 2000 provides special training that shows teachers how to raise the learning levels of slower students without limiting the progress of quicker students, who are allowed to advance through the program at their own pace. Those who need extra help to achieve minimum Equity 2000 expectations receive after-class help.

Erasmus, Desiderius (1466?–1536) Dutch scholar, philosopher and author, whose humanistic writings on the instruction of the young exerted a profound influence on American education during the 17th and 18th centuries. In many ways, the philosophy of Erasmus presaged progressive education of the late 19th and 20th centuries. His *De Ratione Studii* (On the method of study, 1511) and *De Pueris Satim ac Liberaliter Instituendis* (On teaching children firmly but kindly, 1529) suggested teaching Latin at home in natural conversation—much the way children learn their native tongues, before they begin formal schooling. Grammar, he said could be taught later in school. Erasmus also advocated introduction of physical education in school, and he recommended stimulation of student interest rather

than severe punishment as a basic method of teaching.

essay (college application) An element of most college and university application forms that offer student applicants an opportunity to reveal their personality in a piece of original writing. Often called a “personal statement,” the essay section of many college applications asks the student to “tell us something about yourself.” The essay gives students an opportunity to reveal their personalities, their maturity and their emotional and intellectual depth, as well as display their writing skills, originality and ability to organize thoughts and express themselves.

Most applications ask for essays of about 200 to 500 words. Some ask the student to “evaluate a significant experience or achievement that has special meaning to you” or “write about a person who has had a significant influence on you, and describe that influence.” Still others ask the applicant to “discuss some issue of personal, local or national concern and its importance to you” or, more simply, “Write on a subject of your choosing. We are interested in anything of importance to you that will help us better understand your abilities, your interests, your background, your aspirations.”

In addition to the personal statement, some applications ask for additional essays designed to display academic and intellectual depth, for example, “If you were a journalist with an opportunity to interview any person living, deceased or fictional, whom would you choose? What questions would you ask and why? What is the most important lesson you feel you could learn from this person?”

The importance of the essay in applications to selective colleges and universities has grown enormously in recent years, as the number of applicants has increased to levels too high to permit the admissions staff to interview all applicants. In many cases, the essay has thus

replaced the interview as the only vehicle for students to display qualities not evident from the statistics and facts listed in the rest of their applications. It is, in effect, the only way admissions officers can get to know the unique characteristics of each applicant; as such, the student's essay can be decisive. It is also a leveling element, completely under each applicant's control and giving all students an equal chance to be open and honest about themselves.

essay test Any subjective examination requiring the production of thoughtful prose to demonstrate command of a particular topic or subject. A difficult type of test both to take and to evaluate, the essay question requires students to demonstrate critical thinking as well as a wide breadth of knowledge and accurate recall of facts and figures. Unlike objective tests, it permits little or no guesswork. For teachers, however, the essay test can present scoring problems because of the subjective nature of answers and the possibility of teacher prejudice toward individual students. Accurate scoring of essay questions requires four basic procedures: Submission of papers without student names (there are various coding devices to accomplish this); the listing, in advance, of specific facts or answers the teacher expects to elicit and the assignment of point values to each; dual grading, with a fixed percentage of the final grade awarded for content and a fixed percentage for spelling, grammar, syntax, penmanship, compositional skills, etc., with grading for content done separately and unaffected by grading for writing skills; and the independent evaluation of each test by two or more readers.

essentialism A "BACK-TO-BASICS" educational movement started in the late 1920s by Teachers College Columbia University professor WILLIAM C. BAGLEY in response to growing neglect of traditional fields of study in public elemen-

tary and secondary schools. Formalized in 1938 by the Essentialist Committee for the Advancement of American Education, the essentialist doctrine called for restoration of strict classroom discipline, high achievement standards and a required core curriculum of basic skills. These included reading, writing, spelling and calculating, along with thorough command of grammar, arithmetic, mathematics, algebra, geometry, the natural sciences, history, geography, fine arts and hygiene. "It is true that the world of today is a different world from the world of 1913 and from the world of 1929," Bagley wrote in 1934, "but this does not mean that everything has changed. . . . The winds that blow still follow the law of storms; *Huckleberry Finn* and *Treasure Island* still delight youth; and the Sistine Madonna is just as beautiful as of yore."

Bagley and the essentialists he led were reacting to an educational trend fostered by overenthusiastic followers of JOHN DEWEY, who had misinterpreted his theories of progressive education. Dewey had urged the use of play as an instructional tool in a highly disciplined setting, but some teachers had started using play as the key element of children's education. As one Los Angeles school superintendent wrote: "The principal business of the child is to play and to grow—not to read, write, spell, and cipher. These are incidental in importance. If they can be made a part of this play, it is well to use them; if not, they should be handled sparingly."

Bagley and his associates countered by ridiculing the progressivists and calling for restoration of traditional methods of mental discipline such as memorization and drill. He called on teachers to take the initiative in the classroom, leaving nothing to students. "The freedom of the immature child to choose what he or she will or will not learn," Bagley wrote, "is utterly insignificant in comparison with . . . a type of freedom which is won only by a

system and effortful mastery of the lessons that man has learned as he has traversed his rough road upward from the savage and the brute." He and his colleagues Michael J. Demiashkevich and Isaac L. Kandel called the traditional curriculum "the tried and tested heritage of skills, facts, and laws of knowledge that have come down to us through civilization."

Essentialist influence grew throughout the 1940s, ebbed during the 1950s, all but disappeared during the two decades that followed, but revived strongly during the 1980s and 1990s as an updated "back-to-basics" movement.

Establishment Clause An abbreviated label for the first 10 words of the First Amendment of the Constitution: "Congress shall make no law respecting an establishment of religion. . . ." The restrictions imposed on the federal government by the First Amendment were extended to apply to state governments in the Fourteenth Amendment, which was ratified in 1868. The Establishment Clause has been a center of controversy throughout the history of American education, as public schools across the United States, often with the support of state legislative mandates, have attempted to introduce PRAYER IN SCHOOL as well as religious teachings such as the biblical story of the creation of the world. Dozens of court decisions, including many by the U.S. Supreme Court, have consistently declared such efforts unconstitutional on the basis of the Establishment Clause, but the efforts nevertheless continue. (See especially *AGUILAR V. FELTON CHURCH-STATE CONFLICTS*; *ENGEL V. VITALE*; *EPPERSON V. ARKANSAS*; *EVERSON V. BOARD OF EDUCATION*; *MCCOLLUM V. BOARD OF EDUCATION*; *SCOPES MONKEY TRIAL*.)

ethics A branch of philosophy concerned with principles and norms of human behavior. Once called moral PHILOSOPHY, it was a required part of the basic curriculum at every colonial college from the opening of the first such insti-

tution, Harvard, in 1638. A key element of the curriculum that was studied over a student's entire college career, moral philosophy dealt not only with man's relationship to man, but his relationship to God, as interpreted by the churchmen who ran and ruled the colonial colleges. Moral philosophy was also a core element of the curriculum for older boys in most academies and LATIN SCHOOLS and was used to indoctrinate them in Protestant beliefs and various political points of view—usually those of the academy head. As the colonial era drew to a close and secular leaders replaced churchmen as college presidents, they gradually replaced theology as the basis of the curriculum with practical studies in the liberal arts and sciences. Moral philosophy, a theologically oriented course, was relegated to divinity schools and replaced in the liberal arts curriculum with secularized studies in ethics. Ethics is now a series of courses within the philosophy and theology departments of most liberal arts colleges.

(See also MORALITY EDUCATION.)

Ethnic Heritage Program A federal program of grants to educational organizations for developing and distributing materials that teach about the contributions of different ethnic groups to the United States. Approved by Congress in 1972, the program was designed to aid in the development of MULTICULTURAL EDUCATION programs to reduce or prevent racial and ethnic tensions in American schools in the aftermath of racial INTEGRATION.

(See also SEGREGATION and listings for various racial, religious and ethnic groups.)

Evangelical Alliance for the United States

The American branch for an international, interdenominational organization formed in London in 1846 to unite Protestant sects in a common war against free thought and Roman Catholicism. Business leader William A. Dodge, who founded the Young Men's Christian Asso-

ciation (as well as the Phelps, Dodge Co.), formed the American branch in 1867, but it did not become powerful until the alliance named JOSIAH STRONG its leader in 1886. Determined “to save American civilization” by turning it into a Protestant Kingdom of God, Strong reached out to the millions of unchurched and unschooled immigrants inhabiting the slums of major American cities. He sent a small army of missionaries, social workers and teachers to teach them academic as well as social skills, while indoctrinating them in Protestantism. Alliance members permeated public school systems and were instrumental in influencing the passage of laws in some states, mandating the teaching of biblical interpretations of the creation of man and the universe, while banning the teaching of Darwin’s theory of evolution. The influence of the alliance waned after the 1925 SCOPES MONKEY TRIAL, in which those who claimed a scientific basis for the biblical theory of creation were ridiculed. The erosion of church membership, attendance and contributions during the economic depression of the 1930s virtually ended alliance influence in American education.

evangelism (evangelicalism) A relatively modern Anglo-American Protestant Christian proselytization movement that relies on the literal interpretation of the Bible, more than church hierarchy, as sole authority in religious matters. Evangelical differences with Protestant church hierarchy surfaced in the New World during the 18th and 19th centuries. Those differences centered on the doctrine of original sin and Christ’s role in removing man’s burden of original sin. Traditional “Old Light” Protestants believed that the fall of man from God’s grace in the Garden of Eden taints every human being with original sin from birth. With the exception of an unspecified elect (often dues-paying members of organized churches) for whom Christ died, original sin leaves the rest

of humanity eternally damned to moral depravity. “New Light” evangelicals, on the other hand, believed that Christ died to remove the burden of original sin from everyone. In effect, New Light evangelism was a democratized Protestantism that promised salvation to all who repented, laid aside all pride and humbled themselves before the Lord. The route to such salvation, said the evangelist preachers, lay in constant study of the Bible and a personal religious experience, or conversion, leading to a deep commitment to Christ.

Derived from the Greek *euangelion*, meaning “good news,” the term dates from the Reformation, whose leaders emphasized biblical writings and rejected the official pronouncements of the Roman Catholic Church. Evangelist practices of free-lance proselytizing go back to pre-Reformation European dissenters such as Peter Waldo and the Waldenses in 13th-century France, 14th-century English theologian John Wycliffe and the 14th-century Czech religious leader Jan Hus.

In the New World, evangelism began with the arrival of the first settlers—the Puritans, Dutch Reformed and Presbyterians, many of whom were evangelist rebels from the mother churches of England and Holland. Although its influence has waxed and waned from decade to decade, Evangelism has been a perennial element of and a profound influence on American life and, in turn, on American education ever since.

Evangelism as a mass movement reached its first peak in the colonies with the GREAT AWAKENING, which lasted from the 1720s to the 1740s. Led by such theologians as Theodorus Jacobus Frelinghuysen, William Tennent, George Whitefield and JONATHAN EDWARDS, the Great Awakening swept across the East and left few Americans untouched by evangelistic fervor. Although a religiously based movement, the Great Awakening had a powerful impact on American society by undermining the notion of

a divinely determined class system and imbuing it with a spirit of religious, political and social equality. Evangelism split communities and their churches and created a plethora of “New Light” and “Old Light” sects and divisions in each church. Because the church remained the center and source of all acceptable community knowledge and learning, the new, democratic, evangelist churches of the Great Awakening expanded the reach of education. They also taught an entire generation of American-born colonists that they were equal to their governors in England—a notion that eventually helped fuel the American Revolution. The Great Awakening might have converted the future United States into a fundamentalist Christian nation had dissent not erupted within the various Protestant sects over the question of original sin. Decrying the excessive zeal of some evangelists, dissidents rejected the notion of spending their lives on Earth burdened with guilt until they experienced conversion. Although egalitarian in concept, the evangelism of Edwards and others demanded a conversion prior to the promise of salvation. Dissenters introduced an even more egalitarian concept of the child being born as innocent as the Christ Child and, therefore, warranting immediate baptism. In addition to dissent within churches, practical considerations of day-to-day life also helped erode the religious strength of the Great Awakening. During the 1750s, political problems such as excessive parliamentary taxation of the colonies seized the attention of colonists. More and more, they spent their Sundays plotting against royal instead of religious authority and ignoring the call to prayer.

In addition, the exigencies of frontier life and the industrial revolution made the learning of agricultural techniques and mechanical skills more important than the need for salvation. Gradually, theology had to share the school day with mathematics, the sciences and foreign languages. At the college level, it all but

disappeared from the core curriculum and became a specialty reserved for those studying for the clergy.

Although secularists dominated the writing of the Constitution of the United States, independence did not bring an end to evangelistic influence on American life. Indeed, it was not until 1791 that secularists were finally able to push through the First Amendment provision, “Congress shall make no law respecting an establishment of religion. . . .” Nevertheless, evangelists were responsible for maintaining official state religions in six of the original states all of which mandated collection of taxes for the support of “public teachers” of the Christian religion. It was not until 1833 that Massachusetts became the last state to end its ties to an official state religion and cede control of common schools to secular teachers.

As secular public school systems were established in Massachusetts, Connecticut and Rhode Island, evangelists turned westward where no schools existed. The Rev. LYMAN BEECHER sounded the call in 1835, with the publication of *A Plea for the West*, writing, “The conflict which is to decide the destiny of the West will be a conflict of institutions for the education of her sons. . . .” He warned that waves of Roman Catholic immigrants from despotic European monarchies were flooding the West, threatening the foundations of American democracy. He said American democracy could only be preserved if Protestant missionaries fanned out across the West, establishing a vast network of common schools and colleges to indoctrinate American children in American Protestantism. A Beecher rival, CHARLES GRANDISON FINNEY, transformed evangelism into the movement we know today by completely democratizing Protestantism and opening it to all. Finney contended that Christ had died to remove the burden of original sin from everyone. Proclaiming a “universal amnesty,” Finney invited all his listeners to repent, accept Christ

and, as a result, salvation. Finney's appeals created an evangelistic fervor that swept across the nation and even reached Britain, where he twice went to preach. A lawyer by training and an electrifying orator, Finney might well have become the nation's most powerful figure had the Civil War not forced Americans from revival tents and onto the battlefield.

Within a decade after the Civil War, evangelist missionaries had nevertheless been responsible for establishing the vast majority of common, or public, schools in the South and West. Even as the public school movement spread and states acquired control of common schools, Protestant teachings were so integrated into elementary school education that the Roman Catholic Church decided to establish its own private, religious school system in 1884, lest public school education convert Roman Catholic children to Protestantism. Evangelistic influences in public school education diminished somewhat in the late 19th and early 20th centuries, when, just as it had in the late 18th century, the practical requirements of an expanding industrial nation made the study of engineering, mining, physics, chemistry, agriculture and other sciences and vocational skills seem more important to students than salvation. Moreover, the influence of new scientific theories such as Darwin's theory of evolution, cast doubt on the practical value of Bible studies in secular schools. Indeed, most universities abandoned theology as a requirement and relegated it to a separate department for those preparing for lives as clergymen.

Evangelists nonetheless continued their efforts to control education. Indeed, during the 1880s and 1890s they sought nothing less than the creation of a Protestant Christian United States. Feeling threatened by the arrival of growing numbers of non-Protestant immigrants, they sought to resolve the conflicts that had divided them since the aftermath of the Reformation. To that end, a number of major

groups united to secure "a larger combined influence for the Churches of Christ in all matters affecting the moral and social condition of the people, so as to promote the application of the law of Christ in every relation of human life." The International Sunday School Union, the Federal Council of Churches of Christ in America and the YMCA/YWCA joined in common cause, each with a specific mission. The first unified the Sunday school curriculum to ensure that every Sunday school was using and teaching the same scriptural materials every Sunday of the year. The second organization developed a common creed for its 33 denominations. Based on what it called "social Christianity," the council's creed called for "equal rights and complete justice for all men in all stations of life." The YMCA carried out missionary work among the idle and the poor in slum districts. They distributed tracts in boardinghouses, hospitals and jails, conducted Bible classes for businessmen, trained Sunday school teachers and set up formal programs of education that included evening classes that mixed secular education with religious indoctrination. Referred to as the "college of the people," the YMCAs offered courses of all levels for youngsters and adults of all ages, including reading, writing, literature, citizenship, civics and vocational skills. Despite these far-reaching efforts, evangelists lost ground during World War I, as public agencies, including the new public high schools rising in cities across America, usurped educational functions, while secular settlement houses competed in the area of social services by offering a variety of enjoyable activities—without sermons. Toward the end of World War I, however, a new wave of evangelistic fervor swept the nation, and many formerly moderate evangelists joined efforts of the more fervently conservative movement of FUNDAMENTALISM to ban the teaching of evolutionism in public schools. A number of southern states responded in the 1920s by passing

laws that not only banned evolutionism from the classroom, but mandated the teaching of the biblical version of the origins of man. The last two such law remained in force until 1967 and 1968, respectively, when Tennessee voluntarily repealed its so-called monkey law, and a year later, the U.S. Supreme Court ruled a similar law in Arkansas unconstitutional.

Waves of evangelistic fervor have continued to sweep the nation from time to time since World War II, and evangelist leaders have managed to coax a number of state legislatures into passing laws that would force schools to teach "CREATION SCIENCE" in public schools. The U.S. Supreme Court has been firm in declaring such laws unconstitutional attempts to impose religious teachings in the science classes of secular schools. Protestant evangelists responded by founding their own evangelical schools or CHRISTIAN SCHOOLS—about 10,000 in the 30 years from 1975 to 2005, with an estimated total enrollment of one million students.

(See also *AGUILAR V. FELTON*; CHURCH-STATE CONFLICTS; *EPPERSON V. ARKANSAS*; *EVERSON V. BOARD OF EDUCATION*; *MCCOLLUM V. BOARD OF EDUCATION*; SCOPES MONKEY TRIAL.)

Everett, Edward (1794–1865) American Unitarian clergyman, educator, orator, statesman and governor of Massachusetts, in which post he was responsible for helping establish the nation's first state public school system. A professor of Greek at Harvard from 1819 to 1825, he was elected to the U.S. House of Representatives, where he served for 10 years before being elected Massachusetts governor in 1836. As governor, he established the first state board of education in the United States. Headed by state senator HORACE MANN, the board was charged with establishing a system of public schools throughout the state. After one term as governor, Everett was named U.S. minister to Great Britain in 1841. He served until 1846, when he became president of Harvard—a post

he held until 1849. He was appointed U.S. secretary of state in 1852–53, served as a U.S. senator from 1853–54, and on November 19, 1863, owing to his reputation as a stirring orator, delivered the little-known, two-hour oration that accompanied Lincoln's Gettysburg Address.

Everson v. Board of Education A landmark 1946 U.S. Supreme Court ruling that the Ewing Township (New Jersey) Board of Education had not violated the ESTABLISHMENT CLAUSE in the First Amendment of the Constitution by reimbursing parents of parochial, as well as private, school children for school bus costs. The court ruled that the program had provided no funds to the schools themselves and, therefore, had done nothing to promote establishment of a religion. The case was the first application of the establishment clause of the Constitution to education, and it became the core of a series of legal cases based on the child benefit theory, which holds that universally available aid provided directly to children and benefiting only them cannot be construed as being of any benefit to the schools which they attend.

(See also *AGUILAR V. FELTON*; CHURCH-STATE CONFLICTS; *MEEK V. PITTINGER*; *MITCHELL V. HELMS*; *WOLMAN V. WALTER*.)

evolution The concept that all living organisms develop continuously through a series of metamorphoses that progress from lower and simpler to higher and more complex forms, based on a process of adaptation to their external environment. Although the concept dates back to ancient Greece, Charles Darwin offered the first successful explanation in his celebrated work *On the Origin of Species by Means of Natural Selection*, published in 1859. Darwin's theory caused consternation among American Christians, who believed that God had created all living things in their present forms.

Although Darwinism worked its way into the science curriculum of most schools and colleges, a surge of fundamentalist Christian fervor after World War I led to proposals in various state legislatures that the teaching of evolution be banned in public schools and colleges. After bitter, protracted debate, the efforts failed in Kentucky, North Carolina and Texas. In 1923, however, Oklahoma passed a law prohibiting the use in public schools of any books that discussed Darwin's theory of evolution. Florida passed a joint resolution declaring it improper and subversive for any public institution to teach atheism, agnosticism, Darwinism or any other theory that links man in blood relationship to any other form of life. Two years later, Tennessee passed the Butler Law banning the teaching of "any theory that denies the story of the Divine Creation of man as taught in the Bible, and to teach instead that man has descended from a lower order of animals." The Tennessee law was challenged by a high school science teacher in the famed SCOPES MONKEY TRIAL and, after the Tennessee supreme court found in favor of the state, Arkansas passed a similar law. After World War II, however, the U.S. Supreme Court issued a series of rulings banning the teaching of "creation science" on the grounds that it was a religious doctrine and, therefore, a violation of the ESTABLISHMENT CLAUSE of the First Amendment mandating separation of church and state. It ruled that any ban on teaching evolution represented an infringement on First Amendment rights of free speech.

Many states with large Christian fundamentalist populations, however, have continued introducing laws that skirt outright bans on teaching of evolution but nevertheless encourage skepticism about evolution by teaching so-called CREATION SCIENCE. State education boards call the approach "balanced" instruction about the origins of mankind. Although it reversed its decision in 2001, the Kansas Board

of Education went a step further by ordering schools to delete all mention of evolution in public school science curricula in 1999. Kentucky followed suit by ordering schools to delete the word "evolution" in favor of the phrase "change over time," and Oklahoma officials ordered all science textbooks to carry a disclaimer about the certainty of evolution. In addition to officially mandated changes in the curriculum, a growing number of teachers committed to "the inerrant word of God" have organized so-called creation clubs in several hundred public schools across the nation. The creationist thrust, however, is not without stiff opposition. The National Science Teachers Association, with more than 50,000 member-teachers, and the National Center for Science Education, continually sponsor programs to prepare teachers to lead their communities in defending evolution theory as essential to proper science education. New Mexico's Board of Education responded to these efforts late in 1999 by barring creationism from the public school science curriculum and overwhelmingly endorsing the teaching of evolution theory. Public ridicule forced the boards of education in Kansas, Kentucky, Oklahoma and other states to do the same, but the emergence of a repackaged form of creationism called INTELLIGENT DESIGN again placed the teaching of evolution in jeopardy in many areas. The Kansas Board of Education mandated introduction of intelligent design in the state's public school science curriculum in 2005. Theorizing that an as-yet-unidentified guiding force directed the development of all living organisms, including humans, advocates of intelligent design claim that living organisms are too complex to have evolved from common ancestors through natural selection and random mutation. Underlying the argument for intelligent design is the concept of "irreducible complexity," which holds that the interdependent parts of most organisms make it impossible for them to have

existed in any other earlier, more primitive form. Unlike creationism, the theory of intelligent design carefully avoids all references to religious beliefs, which, by injunction of the United States Supreme Court, public schools are prohibited from teaching or disseminating. Nonetheless, a Federal District Court in Harrisburg, Pennsylvania, ruled in December 2005 that intelligent design was as much a religious viewpoint as creationism and that public schools injecting it into the science curriculum were in violation of the First Amendment of the Constitution. Early in 2006, the Ohio Board of Education responded by reversing a previous order that tenth grade biology classes include a critical analysis of evolution. Later in 2006, Kansas voters ousted the conservative majority on the state Board of Education and installed a new, moderate board that pledged to restore a traditional science curriculum that does away with all mention of intelligent design and restores straightforward teaching of evolution.

(See also *AGUILAR V. FELTON*; *CHURCH-STATE CONFLICTS*; *EPPERSON V. ARKANSAS*; *EVERSON V. BOARD OF EDUCATION*; *MCCOLLUM V. BOARD OF EDUCATION*.)

Excellence in Education programs A series of programs established in 1982 by the U.S. Department of Education "to identify and publicly recognize unusually successful public schools and, through publicity and other means, encourage others to emulate their successful programs, policies and practices." Originally limited to junior high and high schools, the program was extended in 1985 to include primary schools. Directed by the Office of Educational Research and Improvement, the program sends teams of educators and other authorities in education to examine each school for two days. The 14 key "attributes for success" that the teams search for in each school are clear academic goals, high expectations for students,

order and discipline, rewards and incentives for students, regular and frequent monitoring of student progress, opportunities for meaningful student responsibility and participation, teacher efficiency, rewards and incentives for teachers, concentration on academic learning time, positive school climate, administrative leadership, well-articulated curriculum, evaluation for instructional improvement and community support and involvement. The teams then examine each school's educational outcomes, including achievement test, attendance rates, drop-out rates, suspensions and other exclusions and awards for recognition of outstanding programs and individual performance.

exceptional children Children who require special education because of characteristics that so deviate from the norm as to handicap them in the conventional school situation or prevent them from reaching their full intellectual potential. There are three broad categories of exceptionality: physical, emotional and mental. Among the physically exceptional are children with sensory (speech, hearing, seeing, etc.) disorders, learning disabilities, developmental disorders or any of a variety of bodily dysfunctions, including orthopedic and neurological impairments, birth defects or health impairment. Emotionally exceptional children include those with behavior disorders or emotional handicaps requiring psychological or psychiatric therapy. The mentally exceptional include both mentally retarded and mentally gifted. **GIFTED** children represent the only category of exceptional children who are not handicapped. They require special education nonetheless to help them move ahead of their peers academically while keeping pace socially and emotionally.

exchange program Any of a variety of programs involving the temporary transfer of a student or teacher to a school, college or uni-

versity in another country. Exchange programs are designed to broaden the student or teacher's experience and promote international understanding. Exchange student programs vary according to whether students are in secondary school or university and whether they attend boarding or day schools. In both cases, students earn credit in their home schools for all academic work they successfully complete abroad. Secondary school students not attending boarding schools usually live full-time with host families in the foreign country. Most American-run student exchange programs are operated by private, nonprofit organizations financed by private and public donations.

Almost all teacher exchange programs, on the other hand, are financed by public grants under a variety of U.S. State Department programs created by the Fulbright Act (1946), the Smith-Mundt Act (1948) and the Fulbright-Hays Mutual Education and Cultural Exchange Act (1961). Under these acts, countries that wish to participate in teacher exchange programs must sign an agreement with the United States, designating the framework for future teacher exchanges. Some agreements call for the United States to send and underwrite the costs of a visiting teacher in a school or college in the foreign country. Others call for a mutual exchange of teachers, with varying degrees of financing from both countries, with both the State Department and U.S. Department of Education facilitating the exchange. There are some private teacher exchange programs sponsored by individual colleges and universities and a few private secondary schools, involving mutual teacher exchanges with comparable institutions overseas. In all cases, teachers assume similar duties in the foreign school or college.

(See also AMERICAN FIELD SERVICE; EXPERIMENT IN INTERNATIONAL LIVING.)

executive education A formal graduate school curriculum for midcareer executives.

Although most executive education courses do not lead to degrees, the graduate BUSINESS SCHOOLS at dozens of major universities, including Columbia, Duke, Northwestern, Stanford and University of Pennsylvania, do offer two-year programs leading to the executive M.B.A. In addition, a number of major business organizations such as the American Management Association in New York City and the Brookings Institution in Washington, D.C., offer nonuniversity executive education. Among the offerings in executive education are courses in general management, leadership, marketing and sales, finance and accounting, risk management, operations, business strategy, human resources, global concerns, technology management, e-commerce nonprofit management and the humanities. Most programs are open to all applicants on a first-come, first-served basis, with enrollment limited by class size. The typical student enrolled in executive education is in his or her mid-thirties and earns between \$75,000 and \$150,000 a year; more than 90% are in middle and upper-middle management. Although average costs of executive education are about \$60,000 a year per student, total program costs can range up to \$200,000 per student for a full-time, two-year, degree-granting program. Many intensive, two-week programs cost \$50,000 or more per student. Despite savings in residency costs, the growing number of on-line executive-education programs are equally costly, with some costing as much as \$100,000.

Of the roughly \$20 billion that American industry invests in executive education each year, about 70% is invested in in-house programs, but the \$8 billion spent with American business schools for executive education now represents about half the annual revenues of such schools. Although popular periodicals peddle rankings of such schools, the rankings are specious in that each tends to specialize in specific areas, depending on the demands of its

client companies. Companies that hire university business schools for their executive education tend to prefer Harvard for its courses in general management, for example, but they prefer the University of Pennsylvania's Wharton business school for finance, Northwestern University's Kellogg business school for marketing, and the Massachusetts Institute of Technology's Sloan business school for studies in information systems and management of research and development.

Although companies often send executives to attend regular classes at business schools, most contract with business schools for customized executive-education programs to meet the needs of the particular company. Indeed, nearly half of all business school revenues from executive education flow from customized programs—often held on company premises. Executive education is far more flexible than conventional business school education. Often, several business schools work together to design a customized program for a particular company, while in other cases, a number of companies engaged in a common project unite to contract with a business school to provide specialized executive education in a specific area needed to ensure the success of a joint project (e.g., doing business in China).

executive session A legitimate meeting of a public body, such as a school board, which is closed to the public. To minimize the possibility of corrupt practices, many states and communities have enacted so-called sunshine laws that force most public bodies to conduct business openly, before the public. Even the strictest sunshine laws, however, permit school boards to hold executive sessions if public discussion could hurt the public interest or unduly harm an individual. Certain types of personnel matters fall into the last category, while open discussion of site selection for a new school might not be in the public interest if it unduly

inflated land values and raised costs of school expansion beyond the reach of the community.

exempted child A child of compulsory school age who is not required to attend school—usually because of severe handicaps.

exit examination See GRADUATION EXAMINATION.

experience-based (experiential) learning Knowledge acquired by direct observation or participation in an event. A standard element of virtually every element of the primary school curriculum, experience-based learning diminishes in all but the laboratory sciences as students progress through secondary school and college, where a SUBJECT-CENTERED CURRICULUM, based on lectures, note-taking and textbooks, becomes the basis of most learning.

Experiential education is, however, available at all levels through specialized schools, organized in nonconventional environments such as mountains, forests, deserts, archaeological sites, animal sanctuaries, botanical gardens, scientific observatories, athletic facilities and ships at sea. Experiential education at such specialized institutions can last from several weeks (many are organized as summer camps) to a full semester and even a complete academic year. Some sail-training programs, for example, carry students to foreign countries or for long-term study at sites of interest to marine biologists. Although the focus is always on the study of a specific subject area or, in the case of sports academies, the learning of a specific skill, full-semester experiential academies for secondary school students usually provide a full curriculum of conventional academic studies.

(See also SCIENCE EDUCATION CENTERS.)

experience chart A display, in early primary school, on which teachers record, in large, easy-to-read letters, the experiences of or stories dic-

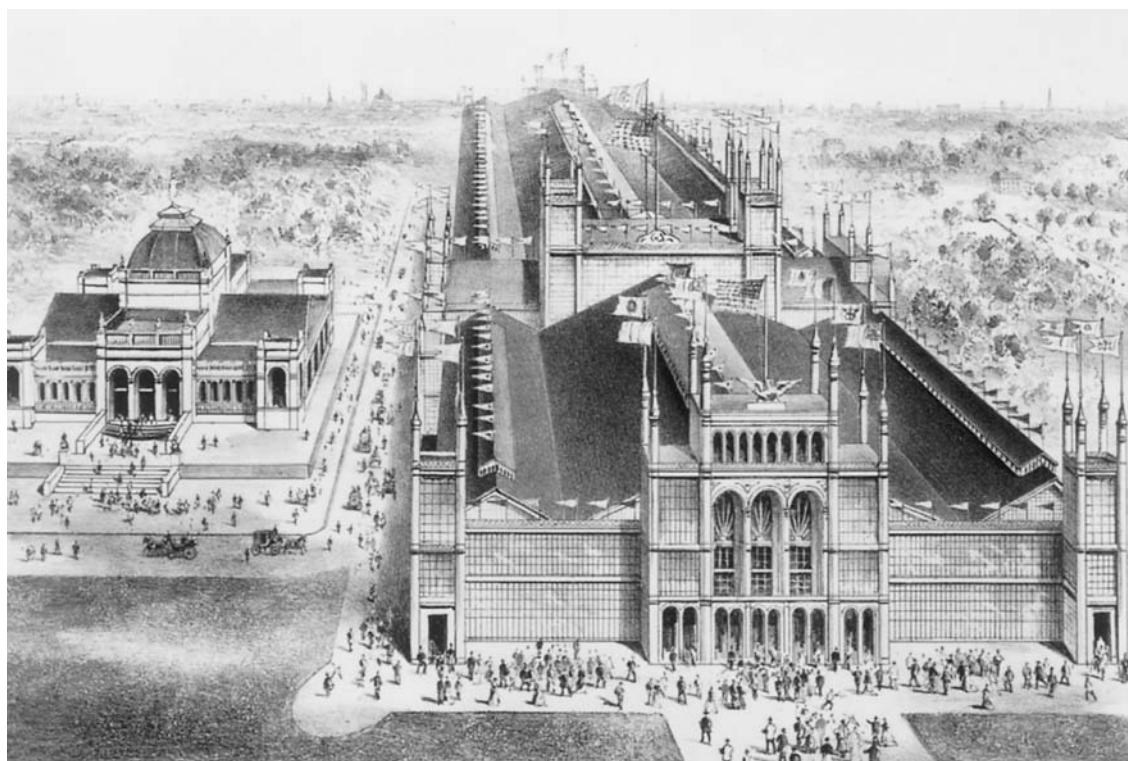
tated by children just learning to read and write. By immediately displaying in writing a sentence dictated by a young child on a large chart or wall display, the teacher encourages the child and the rest of the class to read back the words just spoken. The process also encourages subsequent writing of words and phrases.

Experiment in International Living (EIL)

A cultural exchange program that takes groups of eight to 10 students for a semester of studying and living in a foreign country. Now called World Learning, EIL was founded in 1931, the privately financed organization arranges for students to live with host families for a semes-

ter and participate in intensive study of foreign languages and cultures. Although EIL has programs for individuals, the heart of the program is its group programs, with each group headed by an EIL-trained academic director to oversee study activities. In 1964, EIL established a School for International Training that awards master's degrees.

expositions Large, extended exhibitions of industrial, commercial and artistic products to educate the public and promote increased local, regional, national and international trade. An outgrowth of regional market fairs, the first formal exposition is believed to have



A Currier & Ives engraving of the Centennial Exhibition at Philadelphia, to mark the 100th anniversary of the signing of the Declaration of Independence. Expositions of this sort were a prime source of education for Americans in the 19th century, when few could afford the luxury of school. (*Library of Congress*)

been held in England in 1756–57 by the Society of Arts, which exhibited and awarded prizes to the best English manufactured products. A similar exhibition took place in Paris in 1798, again in 1802, and every three years thereafter. The Franklin Institute of Philadelphia sponsored the first American exhibition in 1824, and the American Institute followed suit in 1828.

In the second half of the 19th century, three types of expositions developed, each of them an important educative institution for the masses at a time when 10% or less of the population attended secondary school. Almost all featured exhibits of the latest industrial and scientific developments, with in-depth explanations of the functions and mechanisms of each. Many also featured fine-art exhibits, while others had entertainment halls where visitors could hear and see the latest works of theater and music. And all featured the latest in new architecture to house their exhibits. One type of exhibition was the industrial exposition of products from one industry or of one country's industries. The first was the leather products exhibition in Berlin in 1877. The second was the printing industry exposition in New York City in 1900. Such exhibits not only generated business but also generated employment. Another form of exposition that developed in the late 19th century was a purely American concept—the regional exhibition to commemorate a historical event. The most memorable were the Tennessee Centennial Exposition, Nashville (1897); the Trans-Mississippi Exposition, Omaha, Nebraska (1898); the Lewis and Clark Centennial American Pacific Exposition and Oriental Fair, Portland, Oregon (1905); and the Jamestown Tercentennial Exposition, Norfolk, Virginia (1907). The third type of 19th-century exposition to develop was the universal exposition, or “world's fair,” sponsored by national governments and featuring pavilions with exhibits from around the world.

The first of these was held in London in 1851 in the Crystal Palace, which was built for the occasion. The Crystal Palace Exhibition was so successful that New York City and Dublin each held similar expositions in 1853, and Paris followed suit in 1855.

The next great American exposition was the 1893 World's Columbian Exposition to celebrate the 400th anniversary of Columbus's discovery of America. The \$31 million extravaganza attracted 27.5 million people to its 65,000 exhibits and was the first to feature an area of amusements designed solely to entertain rather than educate the public.

extension programs Originally, any educational program that extends the reach of an educative institution beyond the formal curriculum and the walls of a school, college or educative agency. Usually associated with agricultural education, extension programs first appeared in the United States in the early 1800s, when huge stretches of land across the eastern United States turned barren because of overplanting and overgrazing. A group of successful agricultural entrepreneurs organized the BERKSHIRE AGRICULTURAL SOCIETY to teach farmers crop rotation, proper fertilization techniques and other methods to help them preserve and restore the soil. The passage of the Morrill Act of 1862 created LAND-GRANT COLLEGES, or public colleges, to offer “practical education,” which included courses in agricultural methods. As the colleges grew, most offered a variation of extension programs whereby interested farmers could obtain the specific knowledge they needed without formal enrollment in classes or any loss of time from the work in the fields. Many teachers actually traveled into the farm lands to provide such instruction and information to farmers and their neighbors.

Although establishment of the Department of Agriculture provided still more informal education, it was not until 1914, with the pas-

sage of the Smith-Lever Act and the creation of the department's COOPERATIVE EXTENSION SERVICE, that these programs were organized into formal extension programs. Working out of the land-grant colleges and universities, Department of Agriculture experts began offering a wide variety of formal and informal extension programs, ranging from informal advice to formal college classes for credit. Extension programs provide plant and soil analysis, a wide range of information, studies, pamphlets, books and training in agriculture, animal care and breeding, construction, home economics and any other subject pertinent to farm management. In nonrural areas, extension programs at private as well as public colleges and universities have expanded to include a wide range of nonagricultural instruction for adults at far lower costs than conventional higher education—and with none of the admissions requirements or time constraints. Of the nearly 100 million Americans participating in some form of adult education, about 10% are enrolled in postsecondary extension courses—often at the nation's most prestigious, academically selective institutions. HARVARD University Extension School, for example, awards well over 100 bachelor's degrees a year, while University of Maryland's extension school, University College, counts well over 4,000 students. Extension schools usually hold classes on weekday evenings and weekends. Harvard Extension School charges about \$550 per lecture course, compared with about \$4,000 for the same course for conventional undergraduates attending Harvard College. Students must earn at least 52 of the 128 credits to qualify for a degree at Harvard Extension School.

More than 86% of students enrolled in extension programs are 25 years old or more, two-thirds are 30 or older, almost 55% are 35 or older and 44% are 40 or older. The vast majority (83%) have some college, 17.4% have an associate degree, 11.2% have a bach-

elor's degree and 21% have attended graduate school without obtaining their graduate degrees. A surprisingly high number have graduate degrees: 12.5% have master's degrees, 8% have doctorates and 11% have professional degrees.

(See also ADULT EDUCATION.)

external degree A college degree awarded to students who successfully complete a prescribed course of study off campus, usually online or by correspondence at an accredited college or university. Hundreds of community and four-year colleges and universities offer a range of external associate, bachelor's and master's degrees with DISTANCE-LEARNING programs that require no class attendance or on-campus examinations. Although some require short on-campus residencies of two weeks a semester, many have no residency requirements and allow students to take each course by simply studying the required texts and mailing required papers to the appropriate instructor. The course credits, degrees and transcripts under external degree programs are no different from those earned in conventional, on-campus programs and, if earned at accredited institutions, are valid at most other accredited institutions. External degrees differ from those offered by fraudulent "degree mills" which have no academic requirement and whose degrees are academically worthless.

An outgrowth of the ADULT EDUCATION movement, external degree programs began in New York and New Jersey in the early 1970s, with the establishment of Empire State College (1971) in Saratoga Springs, New York, and Thomas Edison State College in Trenton, New Jersey. Both are branches of their respective state universities and were established as external, degree-granting institutions for students too busy with jobs, families or other concerns to attend classes on traditional campuses. Housed in a simple office complex in Trenton,

Edison has no campus, no classrooms, no library or any other facilities of a traditional college; yet it serves more than 10,000 students with an average age of just under 40, offering more than 130 courses leading to associate, bachelor's and master's degrees in 100 areas of study. Its 300 "mentors" are faculty members of nearby traditional colleges who serve part-time, charting the direction of each course, determining reading and writing assignments, answering questions and evaluating student progress. All work can be done by e-mail or conventional mail, at the student's own pace, with few time limits. As at Empire State, enrollees are given credit for "life experience," whereby a student's nonacademic accomplishments are evaluated and awarded college credits. Life-experience credits, however, are not routinely transferrable to other accredited institutions of higher education.

extracurricular (extraclass) activities

Planned activities organized and sanctioned by a school or college that bear no direct relationship to the academic curriculum. Depending on the school or college, extracurricular activities may include the range of individual and team athletic games and sports, cheerleading, the fine arts, crafts, music performance, drama societies, student publications, debating, hobbies, academically oriented discussion and study groups, vocation-related discussion and study groups, religious organizations and student government. Also called cocurricular activities, they provide enormous experiential learning opportunities unavailable in traditional classrooms and laboratories. Usually teacher-supervised at the primary and secondary school levels, most extracurricular activities at the college and university level are student organized and oper-

ated and, depending on the institution, may be independently financed or underwritten by the college's reserve of student fees. Some schools and colleges award course credits for participation in some instructor-supervised extracurricular activities. Extracurricular activities became centers of controversy in some high schools and colleges during the last decades of the 20th century as students began forming groups that mirrored the political and religious controversies raging across the nation. Initially, they were ethnically and racially oriented and then expanded into sexually oriented groups, with gay and lesbian students forming organizations that met little resistance at the college or university level, where their peers were legally adult. Such groups, however, provoked storms of public protest at the high school level, where tax dollars supported extracurricular as well as academic activities. Some public high schools responded by abolishing all nonsport extracurricular activities rather than permit sexually oriented clubs on campus.

(See also COCURRICULAR ACTIVITIES.)

eye-voice span (EVS) The number of words which the eye perceives in advance of their evocation by the voice when a subject is reading aloud. Normally about four words for the average adult reader, the EVS is used by some teachers to measure reading progress of primary school children. EVS can be measured by asking a student to read aloud from words projected on a screen and suddenly turning off the projector. The number of words the student continues to recite before stopping is the EVS, representing the number of words the student's eyes perceived before he could express them vocally. Building EVS through measurement sessions helps develop silent reading skills and speed.

Encyclopedia of
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Third Edition



Harlow G. Unger

VOLUME II
F to P

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factory education Instruction of vocational and academic skills in factories by factory-hired teachers. During the late 18th and most of the 19th century, factory education was the primary source of instruction for a large proportion of American children. The practice began in New England in the 1790s, when production of cotton yarn moved from the household into the factory. Before then, most cloth manufacturing had taken place in homes, where girls and women (“spinsters”) produced yarn manually on spinning wheels and then wove the yarn into whatever cloth they needed. The introduction of the spinning jenny at Samuel Slater’s mill, a plant powered by a local waterfall in Pawtucket, Rhode Island, refined, simplified and speeded the process to levels that made household production obsolete. Indeed, the spinning jenny was less complicated to operate than the manual spinning wheels it replaced. To keep costs at a minimum, therefore, Slater’s mill hired children of eight, nine and ten. Although the cheapest and most common form of factory labor, they were often counterproductive because of their inability to read or write. Indeed, leading New England industrialists complained that work force illiteracy was hurting the quality of their goods and destroying their competitive positions in international trade.

Although establishment of public schools and passage of compulsory education laws

helped ease the literacy problem, it created labor shortages, because school hours conflicted with factory hours. The result was the establishment of formal teaching facilities in factories. Children who worked in the afternoon shifts from 12 noon to 6 were required to report for instruction in the factory school from 6 A.M. to 12 noon, while those who worked the morning shifts reported to class at 12 noon and remained there until 6 in the evening. In addition to basic academic skills, such schools also trained children in vocational skills. For many communities, the factory classrooms became the primary sources of formal education.

By the end of the 19th century, however, 30 states had built extensive public school facilities and passed compulsory education laws requiring children to attend. Formal academic education disappeared from the factory, and with passage of federal CHILD LABOR legislation in the 1930s, child labor all but disappeared as well.

Factories did not, however, disband their schools altogether, and many expanded them in an effort to improve academic and vocational skills of adult employees. By 1913, CORPORATION SCHOOLS were offering employees a broad range of education in the arts, sciences, commerce and trade, as well as training in simple job-related skills. After World War II, General Motors Corporation expanded the concept to include a degree-granting institution in Flint,

Michigan. Aside from the formal corporation schools such as the GMI Engineering and Management Institute, factories continue to serve as a primary source of vocational education in the United States. Thousands participate in cooperative VOCATIONAL EDUCATION programs with nearby secondary schools and community and four-year colleges, providing part-time on-the-job instruction that coordinates with classroom instruction at the schools and colleges. Hundreds of corporations are also providing workers with free or low-cost computers—and appropriate instruction—to permit them to participate in on-line education via the Internet.

(See also DISTANCE LEARNING.)

faculty The teaching staff of a school, college or university. Derived from the Latin *facultas*, “ability or abundance,” the term faculty also refers to any innate or acquired ability. A school faculty is, presumably, made up of men and women with abilities in the subjects they teach.

(See also ACADEMIC RANK.)

faculty advisor A member of the school or college faculty assigned as personal counselor to one or more students. Usually a function reserved for private school faculty members, the faculty advisor generally acts as the student’s advocate in school matters such as academic affairs, student-teacher relations, curriculum selection or parent-school and parent-teacher relations. Unlike public school GUIDANCE COUNSELORS, faculty advisors seldom have any special training in counseling and, therefore, are not equipped to handle student social, emotional or psychological problems or college guidance. The faculty advisor, who may, from time to time, have a dual role as the advisee’s teacher, is more an adult friend than a formal counselor.

faculty meeting An official conference of a school’s entire faculty or the members of a sin-

gle department. Usually chaired by the school principal, the dean of the faculty or the department head, faculty meetings may be held on either a regularly scheduled or ad hoc basis. Regardless of scheduling, they are conducted according to standard rules for formal conferences, with an agenda distributed in advance and all matters discussed in a civil, businesslike manner.

faculty senate An elected body representing faculties too large to participate in productive faculty meetings. Usually found at institutions of higher learning, faculty senates are elected by all members of the faculty and may be composed of senior faculty, representatives of each department or a combination thereof. The faculty senate’s role at each meeting is the same as that of faculties that can meet as a body at smaller institutions. The powers of the faculty senate—like the power of the faculty itself—varies from institution to institution and may include faculty-administration relations, setting academic standards, institutional policy making and decision making, tenure granting and hiring and firing of faculty members.

family resource education A segment of home economics education dealing with all aspects of the family and the home, including financial management, consumer education, housekeeping, parenthood, child development and family roles.

Farmers’ Alliances A loosely knit group of cooperative organizations aimed at furthering the educational, financial and political interests of southern and western farmers during the 1880s and 1890s. An outgrowth of the eastern Grange movement of the 1870s, the alliances were a national collection of local farmers’ cooperatives that organized local programs to improve farming with new technology. Often calling themselves “schools” and

"universities," local alliances organized lectures, often by professors from nearby agricultural colleges, on crop diversification, improvement of livestock lines, propagation of fruit trees, restoration of worn-out soil and the comparative advantages of deep and shallow plowing. Alliances also held lectures for farmers' wives on cooking, canning and gardening, and they organized visits to various farms to encourage mutual instruction and assistance. Like the Grange, the alliances also held district and county fairs to permit farmers to see demonstrations of the newest machinery.

Ironically, the improvement in crop production that resulted from alliance educational programs led to surpluses and lower farm income, and as income declined, alliance members turned their wrath on bankers for charging high interest rates and railroads for high costs of transportation. Eventually, the alliances evolved into a political organization that took a leading role in organizing the People's, or Populist, Party and in managing its campaign in 1892. Although its presidential candidate, James Baird Weaver, lost, he received more than 1 million popular votes and 22 electoral votes, and several Populist candidates were elected to Congress. In 1896, Populists gained control of the Democratic National Convention in St. Louis and named WILLIAM JENNINGS BRYAN their candidate for president. After his defeat, the national influence of the Populist Party and the alliances ebbed. The party ceased to exist after the 1908 elections, and the alliances reverted to their original educative functions.

Federal Art Project One of six projects within the Works Progress Administration, a major agency formed under the 1935 Emergency Relief Appropriation Act, to provide jobs for the millions of workers left unemployed by the Great Depression of the 1930s. (In 1939, the agency was renamed Works Projects Admin-

istration.) The Federal Art Project was designed to provide unemployed artists, writers, performers and musicians with modest incomes in government jobs and to use their skills to disseminate knowledge and help educate Americans of all ages. By 1943, when the Second World War obviated the need for it, the WPA had spent \$11 billion and employed more than 8.5 million on more than 1.4 million individual projects; workers were paid the prevailing hourly wage for 120 to 140 hours a month.

Although most of the projects involved manual labor, the Federal Art Project, or "Federal One," as it was called, was specifically aimed at helping educational, professional and clerical workers, and it proved one of the most far-reaching educative programs ever launched in the United States. Its four divisions were the Federal Art Project (a division with the same name as the parent agency), the Federal Music Project, the Federal Theatre Project and the Federal Writers' Project. Together they employed about 110,000 writers, artists, musicians, librarians and others associated directly or indirectly with the arts, thus developing a truly American school of art and preserving the talents of a generation of American artists who might otherwise have been forced to abandon their professions. Moreover, Federal One introduced millions of Americans in the most remote areas of the nation to concerts, plays, books and other cultural experiences to which they had never before been exposed. Federal One artists traveled the nation, teaching men, women and children in community art centers, libraries, hospitals and schools. They held classes in writing, painting, music and drama. Federal One also employed 15,000 librarians and clerical workers to establish libraries in small communities and to catalog or recatalog collections in existing facilities. They engaged in book-binding and book repairs and helped extend library services to more than 2 million people,

mostly in the South and other rural areas, where no libraries existed. In all, they established about 2,500 new libraries and about 2,000 traveling libraries. The Federal Art Project helped such artists as Ben Shahn and the three Soyer brothers, Moses, Raphael and Isaac, develop their talents, and it left thousands of public buildings enhanced with magnificent murals and sculptures.

The Federal Music Project spent \$50 million to employ 15,000 musicians and underwrite 225,000 performances in communities that had never heard classical music. In 1935, the Federal Music Project established the Composers' Forum-Laboratory to encourage living American composers. The Federal Theatre Project restored the theater of the road, initially sending low-priced productions of *Macbeth*, *Murder in the Cathedral*, *Doctor Faustus* and other plays across the United States. As the Theatre Project began producing plays of social protest, however, it came under investigation by Congress, which deemed it to be under Communist influence and abolished it in the Relief Bill of 1939–40. The other three projects continued until 1943, when the entire WPA was abolished.

Federal Committee on Apprentice Training A group created by President Franklin D. Roosevelt in 1934 as part of the National Recovery Administration. The committee's goal was to develop training standards that would safeguard the welfare of apprentices (see APPRENTICESHIP) and assure their proper training and eventual absorption into the work force. Although some enlightened companies had established CORPORATION SCHOOLS to train workers, the vast majority of American companies exploited entry-level workers, paying them substandard wages long after they were functioning as journeymen. The Committee on Apprentice Training acquired legal authority to combat such exploitation after Congress passed the 1937 Fitzgerald Act (1937), directing the

secretary of labor "to formulate and promote the furtherance of labor standards necessary to safeguard the welfare of apprentices . . . [and] to cooperate with state agencies engaged in the formulation and promotion of standards of apprenticeship. . . ." The committee was made a permanent entity within the Department of Labor, which then created a Bureau of Apprenticeship that drafted a model voluntary state apprenticeship statute and persuaded most states to adopt it. The result was a strong federal-state partnership that controls apprentice training to this day.

Federal Council of Churches of Christ in America A body formed by 33 Christian Protestant denominations in 1908 to reverse the secularization of American public schools by introducing Protestant instruction into the curriculum. Later reorganized as the National Council of Churches, the original organization sought to obtain special arrangements in public schools to permit released-time or shared-time religious instruction. Protestantization of public education was but one thrust of the council's overall goal of obtaining "a larger combined influence for the Churches of Christ in all matters affecting the moral and social condition of the [American] people, so as to promote the application of the law of Christ in every relation of human life."

In addition to public school religious instruction, the council launched an ambitious political program aimed at establishing "equal rights and complete justice for all men in all stations of life." Although the council was careful not to tread on interracial relations of the South, it lobbied for abolition of child labor, a minimum wage, suppression of sweat shops and conciliation and arbitration of industrial labor disputes. The council established a powerful religious press, produced religious radio programs, supported a host of denominational colleges and standardized the Sunday school

curriculum in thousands of Protestant churches across the United States.

Federal Family Education Loan See STAFFORD LOANS.

Feinberg Law A 1949 New York State law allowing the state's Board of Regents to compile a list of organizations it deemed subversive and to disqualify members of such groups from teaching in the state's public schools. The U.S. Supreme Court upheld the constitutionality of the law in *Adler v. Board of Education*, in 1952. In 1967, however, the Court reversed itself in *Keyishian v. Board of Regents*, ruling that the law violated the First Amendment guarantees of free speech.

Fellenberg, Philipp Emanuel von (1771–1844) Innovative Swiss educator and social reformer whose experimental educational institution at Hofwyl, an estate near Berne, was the first to infuse pedagogy with kindness and tolerance and the first to mix students of different social and economic classes. An agriculturalist, Fellenberg combined mental, moral and manual education at Hofwyl and promoted a "natural" pedagogy that encouraged the formation of warm, mutually tolerant relationships between children of different social classes. Fellenberg also eliminated punishment as a basic teaching method. Although he punished children who misbehaved, he abandoned flogging children when they made academic errors and encouraged them to learn for the sake of learning.

Fellenberg's work, along with that of his colleague and fellow countryman JOHANN HEINRICH PESTALOZZI, profoundly affected education in the United States. Hofwyl served as a model for English reformer ROBERT OWEN's school in New Harmony, Indiana, and, with farther-reaching consequences, for the state public school systems founded by HENRY BARNARD in Connecticut and Rhode Island. It was a visit to Fellenberg's school in 1835 that convinced Bar-

nard that children of all social classes were equally educable—a revolutionary concept for that era—and that the future of American democracy lay in establishing universal public education.

fellowship A nontaxable financial award, usually to graduate school students, for educational costs and some living expenses. Awarded on the basis of merit rather than financial need, fellowships fall into three broad categories: research fellowships that require the fellow to participate in formal research; sponsored fellowships provided by agencies outside the educational institution (e.g., NATIONAL SCIENCE FOUNDATION); and teaching fellowships that require the fellow to spend a specific amount of time teaching (usually undergraduates in the same field of study). The first formal university-related research fellowships were offered in 1876, by Johns Hopkins University founding president Daniel Coit Gilman, to all 20 students who enrolled in the first class.

Fernald Method A remedial reading instruction method that relies on as many of the child's senses as possible to reinforce learning. Developed at a University of California laboratory school in the 1920s by Grace Fernald and others, the method calls for a student to trace the letters of a word he or she has copied, while saying the word aloud, thus bringing into play visual, tactile, motile, oral and aural senses. After several repetitions, the student is then asked to write the word without using the copy. Eventually, the student learns to write the word without the tracing procedure and can begin recognizing parts of new words that contain elements of the first words learned. Now often called the V-A-K-T (visual-auditory-kinesthetic-tactile) method, the Fernald Method was described in detail in Grace M. Fernald's classic text, *Remedial Reading Techniques in Basic School Subjects*, in 1943.

Field Columbian Museum An institution created after Chicago's World Columbian Exposition of 1893 to provide a permanent display of the exposition's natural history exhibits. Created by a group of philanthropists, the museum was one of many similar museums emerging as educative centers designed to supplement the work of schools and colleges by bringing education to the unschooled. Indeed, the philanthropists who created the Field and other Chicago museums envisioned making Chicago the Florence or London of the American Midwest.

field experience education An element of a student's formal education that is conducted off-campus and that may or may not be supervised by school personnel. Of the many types of field experience education, the most common are: cross-cultural, providing studies of cultural environments other than those of participating students; preprofessional, such as student teaching; career exploration; and cooperative work experience, with on-the-job training tied to formal classroom studies.

field house Any large indoor enclosure with enough unobstructed space to conduct sports and activities normally held outdoors, such as track, baseball, soccer, band practice, etc.

field trip Teacher-led student excursions to sites such as museums, historical restorations, government buildings and other destinations tied directly to some unit of study. Although entertaining and diverting, effective field trips require careful planning and classroom follow-up by the teacher to link each student's practical, visual and aural experiences to textbook and classroom learning.

(See also DEWEY, JOHN.)

financial aid Any of a variety of monetary loans, grants, tax credits, employment opportu-

nities, scholarships, fellowships and stipends offered by public and private agencies, organizations and educational institutions to help students pay the costs of their education. Although the vast majority of financial aid is reserved for higher education, private primary and secondary schools also offer financial aid to some students. Students convicted for sale or possession of drugs are ineligible for federal financial aid for one year from the date of the first conviction, two years from the date of the second conviction and indefinitely after the third conviction.

About 72.5% of America's more than 17 million college undergraduates receive about \$125 billion a year in financial aid of some sort. Nearly 19% receive institutional scholarships from colleges, foundations and so on; nearly 15% receive state grants and loans; and about 46.5% receive some form of federal aid in the form of grants (27.6%), loans (33.7%) and/or work-study programs (5.6%). Indeed, low-cost federal loans to college students account for nearly half the total financial aid to college students. Nonfederal loans account for about 9.2% of total financial aid, federal government PELL GRANTS more than 10%, and other federal grants (by the military, for example) 3.7%. State grants provide about 5% of direct student financial aid, although the percentage is misleading because it ignores the indirect state aid in the form of reduced tuition at public colleges and universities. Such public systems charge state residents only about 40% of what they charge out-of-state residents and often as little as 15%. Receipt of nonfederal aid does not disqualify a needy student from receiving federal grants or vice versa. Indeed, most students cover all or part of their college costs with a combination of state, federal and private aid.

FAMILY CONTRIBUTIONS

In general, college students and their families must contribute a percentage of their income

before becoming eligible for federal aid—usually between \$6,000 and \$8,000 a year, depending on family income and assets and the amount of state aid they receive. Families with assets less than \$50,000 and incomes of less than \$25,000 usually need contribute nothing. On the other hand, families with assets of \$100,000 and annual income of \$100,000 would, on average, be expected to contribute about \$40,000 a year to their child's college education before becoming eligible for aid.

EDUCATION TAX CREDITS

1. Hope Education Tax Credit. Allows middle-income families a credit of \$1,500 a year against taxes during the first two years of a student's undergraduate study. Limited to incomes of under \$100,000 on joint returns and \$50,000 on single returns.
2. Lifetime Learning Tax Credit. Allows middle-income families a lifelong credit of up to 20%, but no more than \$2,000 a year, on higher education or vocational training and job-skills improvement courses.

EDUCATION SAVINGS ACCOUNTS

1. IRAs. Taxpayers may withdraw funds from existing IRAs to pay for college tuition costs without incurring the otherwise mandatory 10% penalty imposed for early withdrawal.
2. Coverdell Education Savings Accounts. Anyone—parent, grandparent, friend—may contribute up to \$2,000 a year in an interest-bearing custodial account for a child that can grow tax-free until the child turns 18. The child must then begin withdrawing the funds—again, tax-free, if used for education expenses. Contributions are not tax deductible.
3. Qualified State Tuition Programs (Section 529 Plans). Although specifics vary from state to state, in general, anyone may establish a 529 account for as much as \$100,000, which must remain in the account for at least 36 months but can grow and be withdrawn tax-free if used for educational expenses. Though not deductible from federal taxes,

contributions can be deducted from taxes of some states.

WORK-STUDY PROGRAMS

Before becoming eligible for financial aid, most students must exhibit a willingness to contribute to the costs of their higher education by working full time during their summer vacations and a reasonable number of hours during the school year. Although many students are able to find suitable employment on their own, those who cannot can turn to other sources:

1. Federal Work-Study Program. The U.S. government provides more than \$1.2 billion a year to help underwrite on-campus and off-campus jobs for needy college students. Jobs range from clerical work to tutoring and pay no less than the federal minimum wage for an average of 10 to 15 hours a week (no more than 40). The government pays 80% of the wages, and the college or off-campus employer pays the remainder.
2. Cooperative education. A program of vocational education in which private industry and local colleges cooperate to provide students with a combination of daily classroom instruction and on-the-job training in part-time, paying jobs. About 1,000 private and public colleges—indeed 75% of all community colleges, technical institutes and junior colleges—participate in COOPERATIVE VOCATIONAL EDUCATION programs.
3. Fellowships. Offered by graduate schools to more than 82% of students, fellowships offer reduced or free tuition and a stipend for living expenses in return for teaching undergraduate courses or participating in university research projects while pursuing graduate studies.

GRANTS AND SCHOLARSHIPS

Direct financial aid of more than \$40 billion a year in the form of outright grants (with no repayments due) is offered on the basis of merit

or need—either as outright government grants paid directly to the college on behalf of a student or as scholarships awarded by private organizations or colleges in the form of tuition reductions.

1. Government grants.
 - a. Federal Pell Grant. The largest need-based student-aid program, through which more than 5 million students a year receive annual awards of up to \$4,500 each.
 - b. Federal Supplemental Educational Opportunity Grant. Distributed by colleges, FSEOG grants in unspecified amounts are awarded in addition to Pell Grants on the basis of demonstrated student financial need.
 - c. Military. Apart from free education at the three service academies—UNITED STATES MILITARY ACADEMY, UNITED STATES NAVAL ACADEMY and UNITED STATES AIR FORCE ACADEMY—the U.S. Army, Navy and Air Force each offer partial or full scholarships for participation in RESERVE OFFICERS TRAINING PROGRAMS at more than 400 colleges and universities across the United States. Veterans are also entitled to various scholarships.
 - d. State grants. Every state has merit or need-based college scholarship and grant programs available to legal residents of the state, usually available only for attending colleges or universities within the state.
 - e. College scholarships. Every public and not-for-profit college and university in the United States offers need-based and merit scholarships, with merit-based scholarships approaching \$10 billion a year. Unrelated to student financial need, merit-based scholarships are awarded by colleges for a wide variety of reasons ranging from a student's academic, athletic, musical, literary, scientific or other skills and achievements to the individual college's need to fill its class. Indeed, fewer than 20% of American college students pay full tuition anywhere, and colleges, on average, reduce listed tuition by about 40%. Some smaller, midlevel private colleges routinely offer thousands of merit scholarships to

all incoming freshmen to lure them from costly "brand-name" private colleges and inexpensive state schools.

- f. Private-source grants and scholarships. An almost endless variety of private organizations—religious groups, corporations, unions, foundations, civic and fraternal organizations, charities and so forth—offer an equally wide variety of grants and scholarships based on high school academic achievement, ethnic or racial background, community activities, athletic ability, proposed field of study and so forth. Most are listed on the Internet.

LOANS

More than one-half of America's college undergraduates obtained loans to pay for all or part of their education—a total of nearly \$67 billion in 2003–04, of which 83% is backed by federal guarantees of one form or another to protect the lender. The average college student graduates \$20,000 in debt from student loans. There are two broad types of higher education loans:

1. Federal Loans.
 - a. Federal Plus Loan. Credit-worthy parents may borrow up to the total cost of a child's college education, less the amount of all student aid. Loans are available through banks, credit unions and savings and loan associations and through special programs such as those sponsored by the COLLEGE BOARD. Interest rates reached 8.5% in 2006 but are subject to change. Loans are based solely on credit rating, not need. Repayment begins 60 days after the funds are disbursed.
 - b. Federal Perkins Loan. A need-based loan from colleges and universities at the lowest available interest rates, with repayment deferred until the student graduates or leaves school. Repayment is deferred still longer if the student serves in the military, the Peace Corps or similar organizations, and the debt is cancelled if the student becomes totally disabled or dies. Perkins

Loans are available to any student enrolled in college at least half-time.

- c. Federal Stafford Loan. Subsidized by the federal government, low-interest Stafford Loans are available through banks, credit unions, savings and loan associations and private organizations such as the College Board. Interest rates reached 6.8% in 2006 but are subject to change. Repayment of interest and principal is deferred until six months after graduation, and payments are stretched over 10 years. The government pays private lenders all interest due during the student's undergraduate years and guarantees both principal and interest against student default.

Unsubsidized Stafford Loans require students to begin repayment immediately after the funds are disbursed.

- d. Federal Direct Student Loan Program. A limited program by which students may borrow directly from the U.S. government through their college financial aid offices.
2. Private Loans.
- a. Student Signature Loans. The College Board and the STUDENT LOAN MARKETING ASSOCIATION ("Sallie Mae") lend up to \$25,000 to students at lower-than-market interest rates. They are repayable in 25 years, and repayment is deferred while students remain in school.
 - b. CollegeCredit Private Parent Loans. Offered through the College Board, these lower-cost loans are offered to parents, who may borrow up to the full cost of their child's education and have 15 years to repay.
 - c. Bank loans. Participating banks, savings and loan associations and other financial institutions offer a variety of long-term, lower-interest loans for college costs based on family savings.
 - d. Tuition-payment and guaranteed tuition plans. Many colleges allow students to pay college costs on a monthly basis, interest-free, with payments beginning about six months before the student begins school—in effect giving the college the interest on the funds during that time. Many col-

leges offer to protect parents and students against all increases in tuition and other charges if they prepay college costs for the full four years when the student enrolls as a freshman.

(See also COLLEGE SAVINGS PLAN; EDUCATION TAX CREDITS; STAFFORD LOANS; STUDENT LOANS; TUITION PAYMENT PLAN.)

fine arts Those arts concerned with the creation of works whose function is primarily aesthetic, as opposed to the practical or utilitarian arts. The fine arts include painting, print making, sculpture, music, literature, poetry and dance and are designed to teach students creative expression and appreciation of beauty, good taste and cultural differences. A relatively new academic discipline in historical terms, most of the fine arts were taught through APPRENTICESHIPS prior to the 19th century, when they were added to the curriculum of women's academies. At the time, men's studies focused on philosophy, religion, the natural sciences, classical and modern languages, history, political science and other practical arts.

Originally called AESTHETICS, the fine arts gradually entered the men's curriculum in the mid-19th century as men's colleges and universities concerned themselves more with development of the "complete" gentleman. Toward the late 19th and early 20th centuries, the evolution of educational goals to include development of the "total child," including the child's creative abilities, helped make fine arts an integral part of elementary school education in the United States.

The growth of the MUSEUM as an educative institution in the late 20th century spurred popular interest in the fine arts and led to an explosive growth in studies of fine arts at every level of education, from kindergarten through graduate school. At the same time, however, soaring school budgets and consequent

increases in property taxes produced widespread taxpayer revolts against spending on what the public perceived as unnecessary luxuries. The result was a sharp cut in school spending on the fine arts to the point where, by 1994, nearly half of all U.S. public schools had no full-time arts faculty members. In New York City, one of the world's centers for the creative arts, two-thirds of the public schools offered no art instruction. Nationwide, art instruction ranged from sophisticated programs, in states such as Minnesota, to virtually none in areas of Los Angeles, Chicago and New York.

In an effort to reverse the decline, the U.S. Department of Education issued a set of voluntary national educational standards for the fine arts. The standards were part of the far-reaching GOALS 2000 of the federal government to raise educational standards of American public schools. The Goals 2000 standards for the fine arts applied to dance, music, drama and the visual arts and sought to ensure that elementary school students understood how to use symbols and ideas in visual arts; that middle school students mastered improvisation and harmony; and that high school students were proficient in identifying and analyzing cultural influences in dramatic work. The standards were drawn by representatives from the Department of Education, the National Endowment for the Arts, the National Endowment for the Humanities and the Music Educators National Conference, with input from a wide variety of artists, musicians, dancers, actors, teachers, parents and business leaders. Each discipline has achievement levels tied to various grade levels. The standards in music, for example, call for fourth graders (9–10 years old) to be able to sing on pitch and in rhythm; for eighth graders to know breath control and how to sing in small and large ensembles. High school graduates should be able to sing music written in more than four parts and be able to perform a varied repertory. Schools adopting the stan-

dards use a test approved by the National Assessment Governing Board to test student proficiency at the end of fourth, eighth and twelfth grades.

finger painting A creative type of free play in preschool and kindergarten that permits children to dip their fingers in nontoxic paint and create often beautiful, albeit haphazard designs. In addition to its creative aspects, finger painting also serves as a relief from the discipline of organized classroom activities.

finger play An early, primary school activity in which children use finger movements, rather than their full bodies, to act out stories and feelings. Often useful for shy children, finger play can also be used to teach certain number and language concepts, such as "big," "bigger" and "biggest."

finger spelling A system of communication for the deaf, using finger configurations to represent each letter of the alphabet and actually spelling out each word letter by letter. Unlike sign language, or SIGNING, which uses arm, hand and finger configurations to represent whole words, finger spelling requires the spelling out of each word. Although slower than sign language, it is more accurate, and experienced finger spellers can spell at a rate of as many as 60 words a minute. When combined with some speech, the system is called the Rochester Method and becomes even faster.

finishing school An obsolete term referring to one- and two-year proprietary and postsecondary schools to teach females the domestic and ornamental arts. The term dates back to the mid-1830s and the development of female seminaries, where young ladies obtained a veneer of cultural education in literature, music and art, but focused largely on learning such ornamental arts as dress, conduct and the social

graces. In addition, finishing schools taught all the domestic arts required for running a proper household among the landed gentry, including everything from placement of flatware and crystal ware at the formal dinner table to the direction of household servants and the raising of children. Finishing schools were a primary source of “higher” education for many American women for much of the 19th and early 20th centuries, and a few such schools survived until the late 1960s.

(See also WOMEN’S EDUCATION.)

Finney, Charles Grandison (1792–1875)

Theologian, educator and father of modern American evangelism. Educated as a lawyer, he experienced a “conversion”—that is, he was “born again”—while preparing briefs in which he related the origins of American legal principles to Mosaic law. Abandoning law, he studied theology, was ordained as a Presbyterian minister in 1824 and promptly denounced not only the teachings of organized Protestant churches but those of his predecessor evangelists, including the Rev. LYMAN BEECHER.

Gifted with near-hypnotic oratorical skills, Finney preached a thoroughly democratized Protestantism, asserting that Christ had died to remove the burden of original sin from everyone. His preachings contradicted those of the traditional, or “Old Light,” Protestants who claimed that original sin left all mankind tainted from birth and eternally damned, with the exception of an unspecified elite (presumably, the dues-paying members of organized churches). Most “New Light” evangelicals had preached that man can free himself of the burden of original sin and find salvation through personal “conversion,” a religious experience produced by intense Bible study and a personal revelation leading to total acceptance of Christ (see NEW LIGHT–OLD LIGHT CONTROVERSY). A firm believer in New Light doctrines, Finney declared that Christ’s death had removed the

burden of sin from every newborn and that he, Finney, was therefore declaring a “universal amnesty,” which offered salvation to all people willing to repent their previous sins on Earth and proclaim their belief in Christ. Finney’s offer of universal amnesty electrified the nation. From everywhere, Americans flocked to hear him and accept his offer. Although his teachings horrified traditionalists, hundreds of would-be evangelical ministers came to learn his revival techniques, which he codified in his *Lectures on Revivals*. These were published as a text for revivalist student-ministers and contained a variety of instructions on design and management of prayer meetings.

Finney was invited to preach across the United States and even in Britain. New York City adherents appointed him minister of the Second Free Presbyterian Church in 1832. His success in conversion led to the formation of several other churches, and in 1836, he organized his own independent Broadway Tabernacle. Meanwhile, publication of his theological lectures brought him an invitation to establish a department of theology at the two-year-old Oberlin College, where he served as professor of theology from 1835 to 1866 and as college president from 1851 to 1866. While there, he developed the evangelical doctrine called “Oberlin perfectionism,” or Oberlin Theology, which became the basis for modern evangelical thought. He also established teaching methods and curricula that not only set standards for evangelistic theological colleges but also influenced the curricula of many American public schools for the rest of the 19th and much of the 20th centuries and virtually Protestantized American public schools for several generations.

First Amendment to the U.S. Constitution The first of 10 Amendments added to the CONSTITUTION in 1791 and collectively known as the Bill of Rights. Although the Constitution was sent to the states for ratification

in 1787, people quickly noticed that it did not list many of the personal liberties and individual rights they assumed they had won in the Revolutionary War. Before ratifying the Constitution, a number of states insisted on passage of a Bill of Rights. Of 12 original such Articles of Amendment, as they were officially called, 10 were passed, of which the First has had the greatest impact on education because of its so-called Establishment Clause: "Congress shall make no law respecting an establishment of religion, or prohibiting the free exercise thereof. . . ."

Initially, the ESTABLISHMENT CLAUSE had little effect on education because it did not prevent individual states from establishing official religions, and six (New Hampshire, Massachusetts, Connecticut, Maryland, Virginia and South Carolina) maintained them well into the 19th century. Massachusetts was last to disestablish the church in 1833. Even after disestablishment, the First Amendment had little effect on education until 1868, when passage of the 14th Amendment barred the states from making any laws that "abridge the privileges or immunities of citizens of the United States. . . ." In effect, the 14th Amendment extended the Establishment Clause to all state governments, as well as the federal government. Passage of the 14th Amendment triggered a church-state confrontation that continues to this day, with many state legislators, chiefly Christian-Protestant Evangelists, attempting to introduce prayer and religious instruction in public schools and the federal courts continually forbidding them to do so.

(See also CHURCH-STATE CONFLICTS.)

First International Mathematics Study A 1964 study of eighth-grader and twelfth-grader mathematics achievement in 12 countries, conducted by the INTERNATIONAL ASSOCIATION FOR THE EVALUATION OF EDUCATIONAL ACHIEVEMENT. The study found that U.S. students ranked below average, and it set off a vast reform of

the mathematics curriculum in U.S. public schools. Although the study provoked national alarm and calls for public elementary and secondary school reforms, the mathematics proficiency of American public school children failed to improve substantially over the next three decades. In 2000, American 15-year-olds still ranked below average for 15-year-olds in the 28 member nations of the Organization for Economic Cooperation and Development. Made up of the most advanced, industrialized nations of the world, OECD counted 24 nations whose students outscored American students in mathematics literacy and 23 nations ahead of Americans in problem-solving skills. American students outscored students from only five OECD member nations in mathematics: Portugal, Italy, Greece, Turkey, and Mexico. In an even wider test of students from 40 countries, American students ranked 28th; students from Hong Kong finished first, followed by students from Finland, South Korea, Netherlands, Liechtenstein, Japan and Canada.

Fitzgerald Act A 1937 federal law passed unanimously by Congress directing the secretary of labor "to formulate and promote the furtherance of labor standards necessary to safeguard the welfare of apprentices." The act gave legislative force to a 1934 executive order by President Franklin D. Roosevelt that created the FEDERAL COMMITTEE ON APPRENTICE TRAINING. At the time, the vast majority of American companies exploited apprentices, paying them substandard wages long after they were functioning as journeymen. The Fitzgerald Act marked the beginning of reforms to safeguard the welfare of apprentices and assure their proper training and eventual absorption into the work force. The law made the committee a permanent entity within the Department of Labor, which then created a Bureau of Apprenticeship. The latter drafted a model voluntary state apprenticeship statute and persuaded most states to

adopt it. The result was a strong federal-state partnership that controls apprenticeship training to this day.

five-day boarding school A private school that offers students the opportunity to live on-campus on school days and return home on weekends, thus allowing them to experience traditional boarding school life without entirely giving up home and family life. Five-day boarding is particularly helpful for children who live too far away to commute to school each weekday, but near enough to return home on weekends. Five-day boarding is also helpful for working parents who return home too late each night to provide a fulfilling home life for their children and for working parents who have transferred to out-of-town jobs, but can return home on weekends. Five-day boarding facilities, with evening study halls and faculty supervision, can also provide stability for children from families experiencing structural or emotional tensions or trauma that might interfere with a student's ability to focus on academics.

flag salute requirement A rite at many public schools that requires every student to salute the flag as it is raised every morning before the beginning of classes. Although not a federal requirement, a number of states and individual communities and school districts have imposed flag salute requirements. Lawsuits by various religious groups have challenged such requirements over the years and produced a variety of controversial court decisions. A 1940 challenge of the Minersville (Pennsylvania) School District's flag salute requirement by the Jehovah's Witnesses produced a U.S. Supreme Court ruling that the requirement did not violate student First Amendment rights. The children were thus forced to salute the flag. In 1943, another group of Jehovah's Witnesses challenged a West Vir-

ginia state law imposing the flag salute requirement in all public schools, and the Supreme Court reversed itself, saying the law violated First Amendment protection of an individual's "sphere of intellect and spirit." Subsequent Court decisions have reversed and reversed those decisions, depending on the wording of the particular flag salute requirement.

Flanagan, (Rev.) Edward J. (1886–1948) Irish-born Catholic priest who migrated to the United States at the age of 18 and eventually founded BOYS TOWN, a pioneering residential institution for homeless, abandoned, neglected and emotionally troubled boys. After earning an A.B. degree at Mt. St. Mary's College, Maryland, in 1906, Flanagan went to study in Europe and qualified for ordination in Austria in 1912. Returning to the United States, Flanagan worked in Omaha, Nebraska, where, after establishing a workingman's hotel, he opened his own home to homeless boys, many of them exploited child laborers. Flanagan believed strongly that environment influenced children's behavior more than heredity. Convinced that "there is no such thing as a bad boy," he purchased a farm near Omaha and eventually expanded his initial accommodations into a campus of 1,400 acres, with 65 buildings, a 1,000-acre working farm, a middle school and high school and a vocational career center for 400 boys. Since its founding, Boys Town has accommodated about 20,000 boys. It now offers out-treatment services to girls as well as boys and operates group homes in cities and suburban communities across the United States.

Flanders Interaction Analysis One of many methods of registering, analyzing and evaluating teaching effectiveness in the classroom and helping teachers improve their style. Developed in the late 1950s by researchers at the University of Minnesota, the system calls for recording all classroom activity and

teacher-student interaction at three-second intervals. Classroom activity is then classified according to a 10-category system of classification, of which seven refer to teacher interaction with students ("praises or encourages," "asks questions," and so on), and two involve student interaction with the teacher. The last category is reserved for periods of silence.

flannelboard An early elementary school classroom device featuring a large piece of flannel stretched over a plywood or other hard surface that can be hung on the classroom wall. Used for dramatic visual displays, the flannelboard allows the teacher and students to place letters or numbers made of differently colored flannel pieces onto the flannelboard, to which they readily adhere.

flash cards A visual aid made up of a deck of cards, each of which has an appropriate question printed on one side and the answer on the back. Designed to increase student speed and accuracy, flash cards are a useful and often entertaining way to improve memorization. Used in a wide variety of drills, flash cards can be used to learn definitions (English, foreign language, science), spelling, mathematics (e.g., $5 + 3 = ?$; $8 \times 4 = ?$; etc), science formulas, rules and definitions, and musical notations. Flash cards are especially useful for quickly separating what a student already knows from what he or she needs to study.

flexible schedule An organization of the school day that allows each class to adjust to the curriculum by meeting for varying amounts of time and varying frequencies. Flexible scheduling allows the faculty to take advantage of innovative instructional methods such as team teaching, cooperative learning, INDIVIDUALIZED INSTRUCTION and ACCELERATION. Flexible scheduling contrasts with traditional fixed scheduling, with, for example, six rigidly timed 50-minute

classes a day. Under flexible scheduling, a class may meet for 40 minutes one day and 120 minutes the next, depending on curricular needs as determined in advance by teachers. Computers have made flexible scheduling a relatively simple task by breaking down the school day into relatively short time modules of 10 or 20 minutes. To determine each week's schedule, teachers need only assign the appropriate number of modules they need for each class.

(See also MODULAR SCHEDULING.)

Flexner Report A catalyst in the reform of medical school education in the United States, the Flexner Report was prepared in 1910 by Abraham Flexner (1866–1959) for the Carnegie Foundation for the Advancement of Teaching. An educator on the staff of the foundation, Flexner proposed raising standards of the medical profession by limiting access to the profession. He proposed reducing the number of medical schools in the United States from 155 to 31, upgrading medical school training and tightening the standards for graduation. Most of Flexner's reforms were adopted and led to significant improvements in the quality of medical education in the United States.

Florence County School District v. Carter A 1993 U.S. Supreme Court decision upholding the right of handicapped children to "free, appropriate public education" and the obligation of local public school districts to pay for such education under the 1975 EDUCATION FOR ALL HANDICAPPED CHILDREN ACT. The decision upheld a successful suit in 1985 against a South Carolina school district by parents of an illiterate 16-year-old. The school had proposed giving the youngster three hours a week of personal instruction, with a goal of helping her make four months of progress during the next school year. Deeming the instruction inadequate, the parents challenged the school in local adminis-

trative hearings and lost. They withdrew their daughter from school and sent her to a specialized boarding school, where she progressed far more rapidly and graduated with a high school diploma three years later. The parents sued the school district for the \$35,700 they had spent for three years of tuition, room and board. The court ruled in favor of the plaintiffs, and in reaffirming the district's obligation to provide "an education that is both appropriate and free," it warned that its decision was not a *carte blanche* for parents to sue whenever they felt a school's program for the handicapped was inadequate. In the Florence County case, the court pointed out, the proposed program was clearly inadequate and the private school program was just as clearly "appropriate" under federal law.

Florida The 27th state admitted to the Union, in 1845. Little is known about early education in Florida. The Spaniards, under Ponce de Leon, first explored the Florida coast in 1513, but St. Augustine (the oldest permanent European settlement in the United States) was not founded until 1565. There is little question that the Spaniards planted families, churches and schools in Florida during the century that followed, but the area was a constant battlefield for Spanish, French and British forces, and none of the Spanish educational heritage was ever handed down to the Florida that eventually became part of the United States.

In 1763, the Spanish ceded Florida to Great Britain following the Seven Years War, but regained control under the Treaty of Paris in 1783. After repeated skirmishes between American and Spanish forces, Spain finally ceded Florida to the United States in 1819, and in 1845, the state was admitted to the Union. Florida did not begin building a public school system until it had passed a constitution in 1868.

In 2005, overall academic proficiency of Florida public school students ranked 35th among the states—just a point or two below national averages. Forty percent of the state's students were minority students, with blacks and Hispanics each making up 17% of the student population. An extraordinarily high 17.5% of students lived in poverty. Because of the large immigrant and migrant-labor population, only 75% of Florida's adults have high school diplomas. The state's public schools have managed to reduce the high school dropout rate dramatically—from 12% in 1995 to only 4.4% in 2001—but the graduation rate was only 85%.

Minority students make up about one-third of the students at the state's huge college system, which counts 15 public and 90 private (38 for-profit) four-year colleges and 25 public and 39 private (37 for-profit) two-year colleges. Graduation rates are 51.7%, slightly below average for the nation.

flow chart A graphic representation of a set of operations, as in the classic "How a Bill Becomes a Law," used by social studies teachers. Most flow charts consist of a simple line connecting a series of triangles, circles or rectangles, each of which symbolizes a step in the process depicted. In addition to its pedagogical uses, flow charts can be used to encourage individual students to fulfill long-term projects or obligations.

Follow-Through Programs A series of federal programs to build on the academic gains of disadvantaged children enrolled in special preschool programs such as Operation HEAD START. Authorized by amendments to the ECONOMIC OPPORTUNITY ACT OF 1964, the Community Services Act of 1974 and the Human Services Reauthorization Act of 1986, Follow-Through Programs were a response to studies of children who had completed Head Start and

other preschool programs for the disadvantaged. Those studies showed that many children emerged from Head Start and similar programs with academic advantages over children who did not participate in such programs. Most of those advantages apparently disappeared, however, by the time children entered third grade. The Follow-Through Programs were designed to offer continuing, comprehensive support from kindergarten through third grade. Support included supplementary and remedial instruction, free medical and dental care, psychological counseling, social services, free breakfasts and lunches, and parent training.

Ford Foundation A private philanthropic organization established by the family of auto magnate Henry Ford in 1936 to build and improve a variety of educative institutions and to influence public policy. In its first 50 years, the foundation's three divisions spent more than \$5 billion. The National Affairs Division helped underwrite a wide variety of programs, ranging from the establishment of EDUCATIONAL TELEVISION to the efforts of the NATIONAL ASSOCIATION FOR THE ADVANCEMENT OF COLORED PEOPLE to desegregate American public schools. The International Division helped establish a wide range of educative institutions in Africa, Central and South America and South Asia, including demonstration farms, educational broadcasting stations and schools of business and management. Its Education and Research Division financed programs to promote equity in public school financing, equal educational opportunity for minorities and women, special programs to meet the needs of adolescents and improved higher educational facilities. In 1979, the foundation began a Fellowships for Minorities program to increase the numbers of minority scholars in university education and research. The program awards about 2,000 grants ranging from \$14,000 to \$30,000 a year to minority scholars for travel and research.

(See also FUND FOR THE ADVANCEMENT OF EDUCATION.)

Foreign Language Assistance Program A U.S. Department of Education initiative to promote expansion in the study of foreign languages in public schools by generating a corps of 1,000 new foreign-language teachers. In addition, the initiative has granted \$1 million each to 24 school districts to form partnerships with local colleges to establish programs for so-called critical languages, such as Arabic, Farsi and Chinese, from nations and geopolitical areas that the U.S. government considers critical to national interests.

(See also NATIONAL SECURITY LANGUAGE INITIATIVE.)

foreign-language study In U.S. education, the study of any language, ancient or modern, other than English. Until the 17th century, the formal study of foreign languages in schools was tied to the study of theology and limited to Latin, Greek, Hebrew and several other ancient scriptural languages such as Aramaic and Chaldean. The formal study of modern languages in the United States evolved as 18th-century college curricula began to emphasize more practical courses appropriate for the industrial revolution and surging international commerce. As the secondary school curriculum expanded during the late 19th and early 20th centuries, foreign-language study gradually became a part of high school and junior high school studies. At the time, most colleges required at least three years of foreign-language study for admission. In 1915, 36% of American high school students studied foreign languages.

After World War II, when the United States assumed the status as a "superpower" in commercial as well as military affairs, foreign language study began seeping into the elementary school curriculum. In the mid-1960s, however, there was a massive student/parent rebellion

against “irrelevant” courses—that is, courses without evident, immediate practical value in day-to-day work and social life. The result was a sharp drop in the number of students enrolled in foreign-language courses, from 31.5% in 1965 to 22.2% in 1976.

Since then, interest in foreign languages has increased dramatically, reflecting, in part, increased travel abroad, increased enrollment of foreign-born students, television transmission of American involvement in foreign affairs, and Internet transmission of “virtual” tours to almost any tourist destination in the world. In addition, the Department of Education has supported the FOREIGN LANGUAGE ASSISTANCE PROGRAM with grants to promote teaching of foreign languages in public schools. The result has been an appreciable, albeit far from dramatic, increase in the number of students of foreign languages, with nearly 45% of American public high school students now enrolled in foreign languages. Thirty percent study Spanish; 8% French, 2% German, 0.5% Italian, 0.4% Japanese, 0.1% Russian, and 1.3% other foreign languages. Only 1.3% still study Latin, compared with nearly 8% in the 1940s, when many private colleges required at least two years of Latin for admission.

Enrollment in foreign-language courses has also increased at the college and university levels, though far less dramatically and often spurred only by reimposition of foreign language study as a requirement for graduation. Nearly 17,000 students earned bachelor’s degrees in foreign languages and literature in 2003—a mere 1.25% of all bachelor’s degrees awarded and well below the more than 20,500 foreign-language degrees awarded in 1971, when they represented about 2.5% of all degrees. Just over 3,000 students earned foreign-language master’s degrees—about 0.6% of master’s degrees awarded. The 1,042 doctorates in foreign languages and literature represented 2.25% of all doctoral degrees awarded. Only

111 of the bachelor’s degrees, eight of the master’s degrees and none of the doctorates were awarded in Latin.

A serious defect in the teaching of foreign languages in the United States has been a shortage of native speakers—especially of African, Middle Eastern and Asian tongues. The U.S. State Department’s NATIONAL SECURITY LANGUAGE INITIATIVE has created summer immersion programs to train more than 250 students in so-called critical languages, such as Arabic, Farsi and Chinese, from areas of the world that are critical to American foreign-policy initiatives. The department also brings about 300 native speakers of critical languages to the United States each year to teach in school and college foreign-language programs.

Language instruction techniques vary widely, depending on the goals of the particular course. At the elementary school level, there are three basic approaches: Foreign Language Experience (FLEX), Foreign Language in Elementary School (FLES) and Immersion. A supplement to the regular curriculum, FLEX is designed simply to give elementary school children a taste of the language and culture of another land. Devoid of reading and writing, FLEX teaches only a basic vocabulary and the rudiments of conversation. Sessions meet 20 or 30 minutes twice or three times a week and are led by the students’ regular teacher—a cost-saver, because it does not require the hiring of a teacher fluent in the foreign language being taught.

FLES, on the other hand, requires a trained foreign language teacher to provide at least five hours a week of instruction. Standard in elementary schools of most other nations, FLES aims at teaching fluency, along with reading and writing skills. FLES instruction usually begins in third grade (eight-year-olds), with students listening to songs and simple dialogues on tape and responding by singing songs and asking and answering questions.

Reading and writing begins with labeling every object in the room with its foreign name and eventually using workbooks to label pictured objects.

IMMERSION is the most intense of the foreign language instructional techniques at the elementary school (or any other) level. Similar to going to school in a foreign country, immersion forces all students to speak nothing but the foreign language throughout the school day. Immersion does not permit the introduction of the children's native tongue as a medium of instruction until the students have become fluent in the foreign language—usually after completing kindergarten and first grade. Schools using the immersion technique may then introduce an hour of reading in English in the second grade, a little more in the third grade and then conduct about 40% of the curriculum in English in grades four through six.

Foreign-language education at the elementary school level remains controversial—largely because of the extra costs entailed in hiring specialists and the questionable value of foreign-language instruction in a nation in which English is the only language ever heard or spoken in many areas and in a world in which English is the international tongue and represents 95% of all Internet transmissions. The same controversy surrounds foreign-language instruction at the junior high and high school level. Fewer than half the junior high schools in the United States offer any foreign-language instruction. The availability of foreign-language instruction in high schools correlates with the size of the school and with the economic level of the community it serves. High schools in the most affluent, cosmopolitan areas offer the richest mix of foreign-language instruction. Some high schools in isolated or disadvantaged communities offer none.

Vocabulary development and the ability to carry on simple conversations are the primary goals of most junior high school language

instruction, with grammar a secondary goal. Instructional devices include textbooks, CD-ROMs and computer software. In contrast, conversational fluency, developed by listening, speaking, reading and writing, is the primary goal of most high school programs. Although high school students also rely on textbooks, computer equipped language laboratories play a far greater role in day-to-day instruction than they do in junior high schools. The language laboratory allows a student to sit in a booth equipped with recording devices and computers and listen to the language, record themselves and listen again. Instruction at the highest levels of high school and at college makes greater use of language laboratory facilities and, with each succeeding year, places ever increasing emphasis on the study of literature and writing of essays.

(See also NATIONAL SECURITY EDUCATION PROGRAM.)

foreign students in the United States

Nonresident aliens who have been granted temporary visas to study at accredited schools and colleges in the United States. Although there are a number of exchange programs that send foreign secondary school students to American high schools, the vast majority of foreign students in the United States attend institutions of higher learning, where they made up more than 3.5% of the total college and university student population in the 2001–02 academic year.

The percentage of nonresident aliens is highest in American graduate schools, where they earned 14% of the more than 500,000 master's degrees awarded in academic 2002–03 and an astonishing 37.3% of the 46,000 doctorates. In contrast, they earned a mere 3% of the 1.35 million bachelor's degrees, which, for most foreign students, represent secondary school work. (See COLLEGE.) To the dismay of many American leaders in education, science,

business and political affairs, nonresident aliens earned 64% of doctorates in engineering, 47% of doctorates in the physical sciences, 46% of doctorates in business and 35% of doctorates in life sciences awarded by American universities.

The increase in the numbers of foreign graduate students has been accompanied by a comparable decrease in graduate degrees awarded to U.S. citizens. Because many nonresident alien students returned to their homelands after receiving their degrees, the shift in the composition of the graduate school student population raised fears that American technology would suffer as fewer American students emerged from doctoral programs to fill jobs as scientists in industry or as researchers and professors in universities. Some educators also contended that noncitizens received financial aid in the form of fellowships that might otherwise go to hard-pressed American graduate students. Massachusetts lawmakers responded with a 1987 law requiring foreign students to pay much higher tuition than Americans, but the law was quickly repealed. Other states tried barring foreign students from sections of research libraries containing sensitive scientific information.

Between 500,000 and 600,000 foreign students attend American colleges and universities each year, about 54% in undergraduate programs and 46% in graduate schools. About 100,000 attend two-year colleges. Some 66% were enrolled in public institutions and the rest in private institutions. About 68% were men. Students from Asia made up the majority—55.7%; Europeans made up 14%, Latin Americans 11.7%, Middle Easterners 6.6%, Africans 6.5% and North Americans 4.6%. India sends the most students—more than 80,000—followed by China, which sends more than 60,000 students; South Korea, which sends just under 60,000; and Japan, which sends nearly 40,000 students to America. In the 2005–06 academic year, University of Califor-

nia had the largest contingent of foreign students (6,881), followed by Columbia, Purdue and New York universities and University of Texas (Austin), with about 5,500 students each. Foreign students make up more than 20% of total enrollment at Carnegie Mellon University, Massachusetts Institute of Technology, Columbia University, University of Southern California, City University of New York Bernard M. Baruch College and Stanford University. Foreign students contribute more than \$13 billion a year to American colleges and universities and the U.S. economy, because they usually pay all costs of attending school and spend heavily on transportation, tourism, leisure and so forth. Indeed, the wealth of foreign students has been enticing enough for many American colleges and universities to establish permanent overseas offices to recruit foreign students. To further exploit the rich Asian market, some colleges have opened campuses abroad, usually offering single-degree programs such as MBAs or engineering degrees. Cornell, Johns Hopkins and Stanford universities, Massachusetts Institute of Technology and University of Chicago have campuses in Singapore; Northwestern University is in Hong Kong. Many American universities have long operated small, specialized schools in Europe for studies in art or history.

(See also AMERICAN UNIVERSITIES ABROAD.)

for-profit colleges A profit-making, commercially operated segment of higher education, generating \$20 billion a year from 3,000 actual or on-line campuses for nearly 1.6 million students, or 10% of America's college students and untold students overseas. The largest for-profit college system is the Apollo Group, Inc., with annual revenues of more than \$2.5 billion in fiscal 2006 and more than 200,000 students at its flagship PHOENIX UNIVERSITY and 132 campuses in 34 states, Canada, Mexico, Brazil, the Netherlands and India. Often

operated as divisions of corporations, the other large for-profit college groups include Career Education Corp. (\$2 billion in revenues from 81 colleges in 26 states and 100,000 students), Corinthian Colleges Inc. (\$966 million from 128 colleges in 24 states and 66,000 students), De Vry Inc. (\$843 million from 72 campuses in 21 states, Canada and the Caribbean and 50,000 students), Education Management Corp. (18 colleges, 24 states, more than 30,000 students), ITT Educational Services Inc. (\$688 million from 70 campuses, 30 states and more than 30,000 students), Laureate Education Inc. (\$875 million from colleges in one U.S. state and 11 foreign countries in South America, Europe and Asia), and Strayer Education Inc. (\$220 million from 17 campuses in eight states and D.C., with more than 20,000 students).

The fastest-growing segment of higher education, for-profit colleges have limited their academic offerings to career-oriented courses leading to degrees in business or associated areas. Tuition and fees range approximate those of conventional, nonprofit institutions, ranging from \$7,000 a year to more than \$20,000. Unlike conventional colleges and universities, however, most for-profit colleges operate without accreditation from traditional ACCREDITATION ASSOCIATIONS and leave thousands of students unable to transfer costly credits to accredited, degree-granting institutions, which do not recognize credits from unaccredited institutions. The result is often a mountain of debt from student loans and years of work that prove worthless for pursuing education toward advanced degrees.

(See also AMERICAN UNIVERSITIES ABROAD; CAREER COLLEGES/SCHOOLS; COMMERCIAL SCHOOLS; ENTREPRENEURIAL SCHOOLS; PROPRIETARY SCHOOLS.)

for-profit education industry A \$100-billion-a-year, broad-based industry made up of corporations and organizations engaged in the production, distribution and sale of educational

products and services for profit. There are four basic segments of the for-profit education industry: educational services, with just under 40% of total industry revenues, derived from corporate training programs, tutoring, test preparation and language instruction; operation of for-profit, OR PROPRIETARY, SCHOOLS, with about one-third of industry revenues, derived from child-care facilities and for-profit pre-primary, primary and secondary schools; production and sale of learning products, with nearly 12% of total industry revenues, derived from textbooks, educational software and school supplies; and electronic services, made up of Internet education portals and Web sites—basically outsources—offering internal and external content-based software, search capabilities, on-line education from schools and colleges and educational e-products sales sites. Electronic services was the fastest growing segment of the for-profit educational products industry in 2000.

foundation A not-for-profit organization or institution established by endowment to provide a regular source of income for philanthropic purposes over an extended period of years. There were nearly 65,000 foundations in the United States at the beginning of the 21st century, with assets totaling more than \$435 billion. With assets swelled by a decade of unprecedented prosperity and roaring bull markets for stocks, America's foundations were making nearly 130,500 individual grants of \$10,000 or more a year, for a total of nearly \$16 billion in annual grants. By law, most foundations are required to give away at least 5% of their assets each year or face the loss of their tax-exempt status.

Of total foundation grants in 2002, about 37%, or \$5.9 billion, went to educational institutions and 4.2%, or \$670 million, went to the arts and cultural projects that could, in broad terms, be described as educative. Foundations contributed more than \$3.2 billion to colleges

and universities in 2002, nearly \$800 million to schools and the rest to educational support services and miscellaneous education projects. In academic 2003–04, the foundations nearly doubled contributions to colleges and universities with gifts of \$6.2 billion, which accounted for about 25% of all voluntary support for higher education.

Until the last half of the 20th century, only three great foundations contributed substantially to education in the United States: the CARNEGIE, FORD and ROCKEFELLER FOUNDATIONS. In 1989, publisher Walter H. Annenberg added his name to the list with the ANNENBERG FOUNDATION, which contributed more than \$1 billion to public and private education. In the 1990s, an astonishing period of unprecedented prosperity and record corporate profits gave rise to the establishment of an exceptionally large number of new foundations, many of them devoted to education. By far the largest—and by then the world’s richest foundation—was the \$30 billion BILL AND MELINDA GATES FOUNDATION, Seattle, Washington, launched by William H. Gates 3d, cofounder and chairman of Microsoft Corporation. The foundation created a \$1 billion scholarship program for disadvantaged minority students and made a variety of grants to enhance public school education across the nation: \$100 million to improve training of school administrators, \$70 million for teacher training and \$150 million to improve education in 30 specific school districts.

In 1998, the Albertson Foundation, in Boise, Idaho, with assets derived from a supermarket fortune, pledged \$110 million in grants to Idaho’s public schools, and, a year later, Eli Broad, chairman of Sun America, a Los Angeles-based financial services company, set aside \$100 million to help train superintendents, principals and staffs of urban school systems. In New York, billionaire Wall Street financier Theodore J. Forstmann, chairman of Forstmann, Little & Company, established a \$200

million Children’s Scholarship Fund to send 40,000 low-income children to private schools, while Goldman, Sachs & Company, the huge Wall Street investment firm, established a corporate foundation bearing its name, with an endowment of \$200 million. Other, similar foundations included the Milken Family Foundation, created by Wall Street financier Michael Milken; the George Lucas Educational Foundation, established by film producer George Lucas, the creator of *Star Wars*; and the Frederick and Sharon Klingenstein Fund, founded by the Wall Street financier and his wife to establish an institute of laboratory and clinical research at Mount Sinai School of Medicine in New York and to provide scholarships.

foundation program A state-operated funding scheme to ensure a minimum level of instruction and educational facilities—a “minimum foundation”—for every school district in the state. Designed to raise the educational quality of poorer school districts to minimal standards and to ensure every student equal educational opportunities, foundation programs provide supplementary state funds for any district whose revenues do not permit maintaining those standards on its own. The effects of foundation programs, however, vary widely from state to state, depending on the standards set by each state and the per capita funds allocated for each student. In addition to per capita funding, foundation programs usually consider class size, number and kind of teachers and administrators, school facilities, number of students in the district, wealth of the district’s population and the district’s effort to collect the amount of taxes appropriate to its needs.

foundation school An independent Jewish elementary day school that combines religious and academic studies, usually under the sponsorship of Conservative or Orthodox Jewish trustees. Operating from preschool through

sixth grade, foundation schools differ from other types of Jewish religious elementary schools in that they give equal emphasis to secular education.

(See also JEWISH EDUCATION.)

4-H Clubs An educative organization for nearly 7 million youngsters 9 to 19, founded in Iowa in 1906 to help farm youth "learn by doing." Expanded into a national organization in 1914, 4-H was a rural counterpart to the YOUNG MEN'S CHRISTIAN ASSOCIATION, YOUNG MEN'S/YOUNG WOMEN'S HEBREW ASSOCIATION and urban settlement houses of that era in that it was a response to growing fears that idle adolescents in America were out of control. Only 10% of American children attended high school while the rest went to work in factories, mines and fields. Jessie Field Shambaugh (1881-1971), the Page County, Iowa, superintendent of schools, founded the first clubs in 1906. At the time, agricultural employment was seasonal work that left tens of thousands of adolescents roaming the roads of the American countryside.

After the U.S. Department of Agriculture established the COOPERATIVE EXTENSION SERVICE to provide agricultural education for adults, the extension of such educational services to youngsters was a natural outgrowth, and the 4-H Clubs served as a conduit for those services. Although suburban and urban youngsters now outnumber rural members, 4-H continues to function under the Cooperative Extension Service, in cooperation with state and county governments, various agricultural colleges and county extension agents. Each club has a volunteer adult, trained by a county extension agent. The emblem of 4-H is a four-leaf clover, designed by Shambaugh, with an H on each leaf, representing the words *Head, Hands, Heart and Health*. Each member participates in one or more appropriate career-oriented projects such as raising and selling livestock, raising and canning vegetables and fruit, conducting scientific

experiments, participating in an engineering project and participating in some citizenship or leadership project. Educational television provides special programs for 4-H members, teaching electronic work, automotive care and safety, animal care and preparedness in emergencies. 4-H expanded into Canada in 1931 and has now spread to some 85 other countries.

Fourteenth Amendment to the U.S. Constitution An 1868 addition to the Constitution forcing all state governments to abide by the federal constitution. Until the Federal victory in the Civil War, individual states had claimed sovereignty over all matters not specifically covered by the Constitution. Thus, while the Constitution prevented Congress from establishing an official religion, it did not prohibit individual states from doing so. New Hampshire, Massachusetts, Connecticut, Maryland, Virginia and South Carolina did just that and maintained official religions well into the 19th century, with Massachusetts the last state to disestablish the church in 1833. Moreover, the original Constitution did not define American citizenship, thus allowing individual states (and Congress) to deprive African Americans of citizenship and all constitutional rights. Thus, under the Constitution, southern states were able to make it a crime, punishable by fines and/or imprisonment, to teach African Americans literacy.

The Fourteenth Amendment changed the situation by declaring, "All persons born or naturalized in the United States, and subject to the jurisdiction thereof, are citizens of the United States and of the state where they reside. No state shall make or enforce any law which shall abridge the privileges or immunities of citizens of the United States; nor shall any state deprive any person of life, liberty, or property without due process of law; nor deny to any person within its jurisdiction the equal protection of the law." The amendment opened the way for the establishment of a vast system of

public schools and colleges for African Americans throughout the South and North alike.

Fourth Amendment to the U.S. Constitution One of 10 Amendments to the Constitution passed in 1791 and known collectively as the Bill of Rights. Although the Constitution was sent to the states for ratification in 1787, the majority of citizens protested that it did not list many of the personal liberties and individual rights they assumed they had won in the Revolutionary War. The states responded by making ratification subject to eventual passage of a Bill of Rights. Of 12 original Articles of Amendment, as the Bill of Rights was officially called, 10 were passed. The fourth of these guaranteed the right of people to be safe from unreasonable searches of their person or property and seizure of themselves (arrests), their houses, their papers and other property. The Fourth Amendment had little effect on education, however, until after World War II, when growing student use of drugs and alcohol and weapons prompted some school authorities to conduct searches of individual students as well as their lockers, desks and bags.

The courts have left the question of a minor's constitutional rights vague, however—a reflection, perhaps, of Congress's reluctance to define those rights. Nevertheless, the parents of some students have sued and won some cases (and lost some) against school authorities for violating student Fourth Amendment rights. The U.S. Supreme Court has yet to produce a decision to clarify the Fourth Amendment rights of minors and has left the question to state courts to decide on a case-by-case basis.

In general, state courts have upheld the right of school authorities to conduct unannounced searches of student desks and lockers, which are the property of the school and not of the student. Searches of students, however, clearly violate student Fourth Amendment rights, and the courts have generally upheld stu-

dent rights not to be searched unless school authorities believe the situation to be so dangerous to the health and safety of other students and to school property as to warrant such a search. In other cases, the courts have held that school authorities can only search a student's person with the student's and/or the student's parents' permission. The courts have unanimously denied the right of school authorities to search students off school property. In all Fourth Amendment cases, the courts have generally found in favor of school authorities who have a published policy that clearly states their right to search the contents of desks, lockers and any other school property and the conditions that might provoke searches of individual students.

Franklin, Benjamin (1706–1790) American-born statesman, author, scientist, political and cultural leader, educator and one of the most important influences on education in American history. One of the most versatile leaders in an era teeming with versatile leaders, Franklin was the earliest symbol of the quintessential American—the self-made man. He was self-made in every sense. Except for a year at Boston Latin when he was eight and a year of private tutoring in writing and arithmetic, he was totally self-educated and pursued his quest for knowledge throughout his life. The youngest son of a Boston candlemaker, he began a series of unsuccessful apprenticeships at the age of 10, first in his father's shop, and the following year, at his cousin Samuel's cutlery shop. His last apprenticeship—at his brother James's print shop—proved far more successful. Indeed, he thrived learning the printing trade, devouring books and eventually writing regularly for his brother's newspaper, the *New-England Courant*.

Eager for independence, he broke his indenture in 1723 and ran off to Philadelphia for several months and then to London, England, where he worked as a printer for nearly two



Benjamin Franklin (Library of Congress)

years. He returned to Philadelphia, and three years later, he and a partner organized their own print shop and bought *The Pennsylvania Gazette*, which Franklin published until 1750. In 1730, he bought out his partner and expanded his publishing ventures. He built what for his day was a huge enterprise, publishing many of the classics of the day, along with his own books, including the famed *Poor Richard's Almanack*, which he published annually for 25 years, beginning in December 1732.

Although his wealth permitted him to participate in public affairs as early as 1736, by 1748 he was able to retire from business and devote the rest of his life to public service, writ-

ing, scientific experimentation and a variety of intellectual projects including education. *Poor Richard's Almanack* was the first of his educational projects. "I endeavored to make it both entertaining and useful," he wrote in his *Autobiography*, "and it accordingly came to be in such demand that I reaped considerable profit from it, vending annually near ten thousand. And observing that it was generally read, scarce any neighbourhood in the province being without it, I considered it a proper vehicle for conveying instruction among the common people, who bought scarce any other books. I therefore filled all the little spaces that occurred between the remarkable days in the calendar, with proverbial sentences, chiefly such as inculcated industry and frugality, as the means of procuring wealth. . . ."

The "proverbial sentences" were drawn from what Franklin considered the world's great books and literature, rephrased in Franklin's own easy-to-understand Americanisms, which themselves became standard proverbs. His proverbs aimed at teaching industry, frugality and prudence in the conduct of life and man's potential for success through hard work and the application of one's skills to a useful trade or profession. Obsessed with the idea that self-education through reading and practical experience was the key to success, he advocated reading and an endless search for knowledge. "The doors of wisdom are never shut," he wrote.

To that end, he organized the "junto" in 1727, a group of friends and, later, selected members, who for 40 years shared ideas and literally educated each other. His *Proposal for Promoting Useful Knowledge Among the British Plantations in America*, published in 1743, led to the founding of the AMERICAN PHILOSOPHICAL SOCIETY, a still-functioning organization for "ingenious and curious men" to exchange ideas and information. In 1731, he carried the junto's activities a step further with a proposal "to render the benefit from books more common

by commencing a public subscription library." His Library Company of Philadelphia became the first subscription library in the colonies. Initially stocked with books contributed by junto members, the library solicited subscribers, who contributed 40 shillings for the initial purchase of books and 10 shillings a year for subsequent purchases. Although stocked with classics such as Homer's *Iliad* and *Odyssey* and Plutarch's *Lives*, the library was largely a practical library with atlases, histories and handbooks on everything from husbandry to mechanics. It contained not a single book on theology, which was the primary course of study at most colleges of the day.

In 1743, Franklin also began devising a plan for educating the common man. Published in 1749 and entitled *Proposals Relating to the Education of Youth in Pennsylvania*, it raised the hackles of the educational establishment, which had hitherto reserved formal academic and college education for the sons of the elite. Franklin's *Proposals* called for establishing a residential school taught by "a man of good understanding, learned in languages and the sciences, and especially versed in English." He proposed a curriculum that would include "everything that is useful, and everything that is ornamental: but art is long, and their time is short. It is therefore proposed that they learn those things that are likely to be most useful and most ornamental, regard being had to the several professions for which they are intended."

He then detailed the specific subjects to be taught: handwriting, drawing, arithmetic, accounts, geometry and astronomy; English grammar; the writing of essays and letters; rhetoric, history, geography and ethics; natural history and gardening; the history of commerce and principles of mechanics. Instruction was to include "visits to neighbouring farms and opportunities for natural observations, experiments with scientific apparatus and physical exercise."

With the support of friends, Franklin raised enough funds to open and support the Public Academy in the City of Pennsylvania, with Franklin as president, or chairman, of the board of trustees. In 1751, he added more details to his original proposal in a new work, *Idea of the English School*, which called for a curriculum lasting six years. Its goal, he said, was not to produce scholars, poets or scientists, but "youth . . . fitted for learning any business, calling or profession, except such wherein languages are required." His students, he said, would be qualified "to pass through and execute the several offices of civil life, with advantage and reputation to themselves and country." In effect, it was the first proposal for the modern liberal arts education and, more important, it was the first call in the New World for universal, publicly supported education.

FRANKLIN'S ACADEMY, as it was called, opened its doors and began classes in 1751, after it obtained a charter as the Academy and Charitable School in the City of Philadelphia. Four years later, it expanded its curriculum and obtained a new charter as the College, Academy and Charitable School of Philadelphia in the Province of Pennsylvania, or, more simply, the COLLEGE OF PHILADELPHIA, whose name was changed in 1791 to the University of Pennsylvania.

Franklin never ceased his personal crusade to educate himself, continuing his voracious reading throughout his life and adding to his education by maintaining a voluminous correspondence with the world's great thinkers on an enormously wide range of topics—on slavery with Anthony Benezet, orthography with Noah Webster, electricity with Peter Collinson, the English language with David Hume, constitutionalism with the duc de La Rochefoucauld d'Enville, and printing and publishing with William Strahan. To add to his knowledge he conducted endless experiments, out of which came the 1746 discovery of the Leyden jar, a type of electrical condenser, and the proof that

lightning was an electric phenomenon. Though entirely self-educated, he received honorary degrees from Harvard, Yale and William and Mary Colleges, the first three colleges established in the New World, and from the Universities of Oxford and Edinburgh.

In the midst of all these activities, Franklin was a tireless public servant, serving, at various times, as deputy postmaster general to the colonies; colonial agent for Pennsylvania in London; delegate to the Continental Congress and signatory of the Declaration of Independence; as the diplomat who assured the new republic of victory in the Revolutionary War by obtaining recognition (and tacit military support) of France, England's most powerful enemy; and as the delegate who negotiated peace with Great Britain. He was appointed the first postmaster general by the Continental Congress and established the U.S. postal service. He was also a Pennsylvania delegate to the Continental Congress, which drew up the Constitution.

Along with THOMAS JEFFERSON, JAMES MADISON, BENJAMIN RUSH and several other delegates, Franklin called for guaranteeing every American the right to free education and establishing a national system of public schools. The proposal was defeated by the opposition of industrialists, who relied on children as their cheapest form of labor, by parents, who relied on their children either to work the fields or bring in extra income working in nearby factories, and by southerners, who feared that the education of slaves would incite rebellion and could lead to their manumission (see CONSTITUTION OF THE UNITED STATES). Franklin nevertheless signed the Constitution on September 17, 1787. He died three years later, at the age of 84, honored by his countrymen and universally acclaimed as one of the most learned and civilized men of his times.

Franklin's Academy The academy founded in Philadelphia, in 1751, by Benjamin Franklin and his supporters, who espoused his idea of

practical, free, universal public education. Chartered as the Academy and Charitable School in the City of Philadelphia, classes began with about 145 boys. The school was unusual (and was the source of some controversy) because it was the first academy open to boys other than the sons of the elite and because it all but eliminated theology as the central course of the curriculum.

The six-year curriculum was unique for the era, in that had it had three departments: English, Latin and Mathematics. English was initially given equal weight with Latin and Greek, the original scriptural languages and, therefore, central to all studies of the Bible and theology at elitist academies. The curriculum also included vocational courses on gardening, mechanics, commerce and science, and studies of history and government. Although Franklin later called his academy "a failure" because of traditionalist modifications to the curriculum, his innovations formed the basis of the modern, practically oriented liberal arts education that became the heart of curricula at most 19th- and 20th-century colleges. Five years after it opened, Franklin's Academy expanded its curriculum and changed its name to the COLLEGE OF PHILADELPHIA. In 1791, the year after Franklin died, the college assumed its present name, the University of Pennsylvania.

fraternity A quasi-secret society of college students organized for any of a variety of reasons, including social or professional comradeship, the provision of living accommodations, the bestowing of academic or other honors or the performance of social service. Originally for men only—*fraternitas* is Latin for "brotherhood"—fraternities can be traced back to the University of Bologna in the late 11th century, where student societies, usually organized on the basis of nationalities (and called "nations") provided the only collective living quarters at or near their schools. Those original societies

are still evident at such universities as Uppsala, Sweden, where student groups continue to arrange member housing, administer scholarships and provide other student services, as they have since the university's founding by Sten Sture the Elder in 1477. As universities took over the obligation of housing students in some countries, student societies evolved into social, political or recreational groups such as Germany's infamous dueling societies.

Although rooted in medieval European and English traditions, modern college fraternities in the United States are a uniquely American institution, dating back to the DEBATING SOCIETIES and literary societies formed at Yale University in 1753 and, soon thereafter, at Princeton and Harvard. The first fraternity bearing a Greek letter name was PHI BETA KAPPA, founded at the COLLEGE OF WILLIAM AND MARY on December 5, 1776, primarily as a debating and literary society, although it extended its functions to enrich the social lives of its members. Like earlier literary societies, Phi Beta Kappa represented an attempt by students to assert their rights of assembly, free speech, independent decision and other newly won individual and political freedoms of which they had been deprived by autocratic tutors at strict, British-style colonial schools and colleges. To distance themselves from their tutors, members of Phi Beta Kappa and the Greek-letter societies that followed adopted a variety of secret rites, including secret oaths, secret codes of laws, secret initiation ceremonies, Greek and Latin seals and mottoes and even secret handshakes. Phi Beta Kappa also adopted a badge or key, which elected members wear to this day.

In 1781, two years after granting charters to Yale and Harvard Universities, the original Phi Beta Kappa was forced to dissolve after British troops invaded Tidewater, Virginia, and disrupted life at William and Mary. The chapter was not revived until 1851. In 1875, the University of Vermont chapter admitted the first

two women, thus converting it from a social fraternity into an honor society for students graduating college with high academic honors, outstanding character and other achievements.

In the meantime, other Greek-letter societies had developed along entirely different lines. Beginning in the early 1800s, when few colleges offered boarding facilities to students, fraternity houses sprang up as boarding houses for groups of compatible students, seeking off-campus comradeship, recreation and relief from campus discipline and an alternative to boarding with local families, who might impose restrictions stricter than those of the college. In the late 1800s, as millions of poverty-stricken immigrants crowded into American cities, many fraternities adopted social-service functions. As the number of colleges expanded in the early 1900s, so did the number of national fraternities, with chapters on campuses across the United States. Still the primary source of student boarding facilities, fraternities continued growing as centers of campus social life. By 1940, there were nearly five dozen national fraternities, with tens of thousands of members on campuses across the nation.

The end of World War II and the routine construction of dormitories on college campuses cost some fraternities their role as boarding houses, but their function as social centers increased, as students sought a respite from the sterile atmosphere and uniform appearance of dormitory corridors. Although the number of fraternities remained relatively constant, with about six dozen men's and three dozen women's social fraternities, the number of national fraternity chapters nationwide doubled to more than 5,000, on more than 800 campuses. Membership climbed to about 400,000 members, or about 5% of the population at four-year colleges.

Fraternities suffered a decline in number and membership during the civil rights protests of the 1950s and 1960s and the national

revulsion at discriminatory practices at colleges that depended on public funds. Some colleges and universities banned fraternities entirely. From 1965 to 1972, fraternity membership and, as a consequence, the number of chapters, plunged about 40%.

The 1970s and 1980s, however, saw a revival in the number of fraternities, as civil rights laws ended discrimination. Also spurring the revival of fraternities was the passage of state laws banning the sale of alcoholic beverages to persons under 21, thus forcing student parties off campus into private facilities. By the mid-1990s, an estimated one-third of American college students belonged to residential and nonresidential social fraternities. By then, too, many fraternities had become co-ed.

After reaching record membership levels of about 400,000 in 1990, fraternity membership once again began plunging, as the number of students on financial aid increased and left fewer undergraduates able or willing to afford the hundreds of dollars in annual membership costs. Many students were also repelled by an ever-increasing stream of ghastly headlines about alcohol and drug abuse—and occasional accidental injuries and deaths arising from fraternity pranks and initiation rites. A 1997 study of more than 25,400 students at 61 colleges by the *Journal of Studies on Alcohol* published at Rutgers University found that fraternity leaders exhibited the highest incidence of so-called binge drinking (five or more drinks per sitting) at college, with nearly 74% having engaged in such drinking within two weeks of the survey, compared to 42% of students not belonging to fraternities. Fraternity leaders consumed an average of 14 drinks a week. Although binge drinking by females was lower than males, 55% of sorority leaders admitted to binge drinking, compared with only 26% of non-sorority students. With grade-point averages of fraternity members well below the average of the general student population, serious scholars shunned

the fraternities, and membership dropped precipitously. By 2000, membership had declined 30%, with some campuses experiencing declines of more than 50%. In the eight years ending in 1998, the average chapter size dropped from 54 men to 38. Some fraternities vainly tried stemming the decline by establishing alcohol-free chapters and waiving fees for needy students.

Membership in most fraternities is decided by member voting, following a week in which prospective members “rush” the fraternity by attending parties and meeting members. Those elected to membership—so-called pledges—receive instruction in fraternity history, customs and laws. During a final “Hell Week,” pledges are expected to participate in humiliating and often dangerous initiation rites, and it is this aspect of fraternity life that has repelled a growing number of students. By 2000, there were about 150 men’s and women’s residential and social fraternities, of which 64 were all-men’s organizations and 25 were all-women’s sororities, which have not been associated with the dangerous antics of men’s fraternities. Although sororities on some campuses experienced membership declines, average chapter size across the nation actually rose over the last two decades of the 1900s, from 46 to 54 in the 1999–2000 academic year.

In addition to the more than 150 men’s and women’s residential and social fraternities, there were nearly 90 professional fraternities in 2006 whose members were engaged in the study or practice of specialized professions or vocations such as journalism, law, medicine, music and engineering. There were also about 40 recognition societies for students with high academic achievements in specific subjects and almost six dozen honor societies, such as Phi Beta Kappa, for students who achieved distinction in scholarship, social contributions, character or academic achievement. By 2000, more than 125 fraternities had ceased to exist, although their names remained on record, and, as housing shortages began developing on

some college campuses, students began to revive them—often with financial support from fraternity alumni. Embarrassed by the antics at some chapters, many of the 4 million fraternity alumni have insisted on a ban on alcohol as a condition to their financial contributions.

(See also HAZING; SORORITY.)

Freedmen's Bureau An agency created by an act of Congress in 1865 to provide a variety of assistance to needy blacks in the South after the Civil War. Officially called the Bureau of Refugees, Freedmen, and Abandoned Lands, the bureau was established within the U.S. War Department, which governed the South during Reconstruction. With most former slaves left destitute and flocking by the thousands to Union army bases for help, the bureau's initial responsibility was to provide food, clothing and medical supplies. It then undertook the task of teaching literacy and numeration and eventually was responsible for establishing a system of free public schools for blacks throughout the South and staffing them with white teachers usually from the North. Prior to the Civil War, southern states had made it a crime, punishable by fines and imprisonment, to teach blacks to read. The bureau also founded such institutions of higher education as ATLANTA, Fisk and HOWARD UNIVERSITIES.

In addition to its role in establishing public schools for former slaves, the bureau also regulated wages and working conditions of blacks throughout the South, handled legal trials involving blacks, and controlled and distributed confiscated southern properties. Except for its educational program, which lasted until 1872, most of the bureau's activities ended in 1869, when, to the disappointment of blacks, it returned most confiscated lands to their former owners.

freedom of speech A vague, constantly shifting and highly controversial concept, under

which citizens are free to express themselves orally and in print, without government interference. Protected to a certain extent by the FIRST AMENDMENT OF THE CONSTITUTION, freedom of speech in the United States is not and never has been unlimited. Oral or written expression is not constitutionally protected if it violates laws against libel, slander, incitement to riot or if it creates an imminent danger to the public welfare, promotes crime or constitutes obscenity, sedition, perjury or bribery. Like other civil liberties, freedom of speech is limited by the extent to which that freedom may infringe on the rights of or inflict harm on others. But all such limits are vague and have shifted dramatically from generation to generation throughout the history of the United States.

Closely tied to ACADEMIC FREEDOM, freedom of speech in schools, colleges and universities remains a controversial and unresolved question. Although protected by the Constitution, minors do not have the right of free speech in elementary and secondary schools if those schools have clearly stated policies outlining acceptable and unacceptable student conduct. Similarly, elementary and secondary school teachers are also restricted by their terms of employment, which usually provide lesson plans outlining what they may and may not teach.

At the college and university level, however, the question of freedom of speech is a far vaguer concept because students are legal adults and because so many institutions of higher learning publicly pledge to present students with all sides of every issue. The result at some institutions has been the occasional stifling of free speech, with students shouting epithets at or shouting down fellow students, faculty and visiting speakers—all in the name of "free speech." Meanwhile, faculty members at some schools have presented specious research and distorted, exaggerated or even false historical facts to support their points of view—again, in the name of free speech.

The courts have been of little help in resolving the problem. Different courts, including the U.S. Supreme Court, have issued a wide range of confusing and often conflicting rulings on the clashes between the right of free expression and the right to live free from fear of humiliation and physical threat. New York courts, for example, deemed it unconstitutional for the City University of New York to strip a black professor of his department chairmanship in African studies for teaching students that Jews were responsible for black poverty in the United States. The courts also upheld that same professor's right to teach that blacks were genetically superior to whites and a second professor's right to insist that blacks are genetically inferior. On the other hand, the courts upheld Brown University's right to punish a student for shouting obscene, antiblack remarks in a campus courtyard.

freedom schools A group of widely scattered secondary schools established for black children in various southern communities in the 1950s, during the struggle for racial equality. Designed to prepare students for college, the schools offered advanced academic programs unavailable in black schools under racial segregation. Although allegedly offering "separate but equal" education, racially segregated schools deprived black students of the same educational opportunities as whites—a factor that proved central to the 1954 Supreme Court decision in *BROWN V. BOARD OF EDUCATION OF TOPEKA* declaring racial segregation of schools a violation of the Constitution.

Despite the Court's decision and its order to desegregate schools "with all deliberate speed," southern states persisted in delaying integration for more than a decade. Freedom schools were an element of the civil rights activism that followed *Brown*, with groups of northern teachers and black southern parents collaborating to establish alternative educa-

tional programs to provide gifted black students with the education needed to qualify for college. Although organized as "integrated" schools, they remained largely black, with the few white students usually limited to the offspring of the largely white, northern teachers who staffed the schools. As public school systems gradually integrated during the 1960s, southern freedom schools disappeared. Never a major factor in southern education in terms of numbers of students, they served more as a symbol of the civil rights movement in education than as a force for change in the quality of southern education.

free schools Most recently, a short-lived group of pseudoeducational institutions that was established in California and a handful of major cities in other states in the late 1960s by political and social activists and counter-culture groups. Allied only by their rejection of governmental and other forms of authority, the various founding groups ranged from civil rights activists to Vietnam War protestors to those favoring legalization of marijuana and other drugs. Designed for both children and adults, free schools did away with central authority, traditional rewards and punishment and other characteristics of traditional schools. Schools for minority children focused on teaching the history of injustice to African Americans; those for adults dealt with legal and consumer problems and taught protest skills.

An earlier, 19th-century use of the term *free school* referred to privately operated, charitable elementary schools—usually in cities—for orphaned, impoverished and otherwise neglected children.

Friends, Society of (Quakers) A relatively small Christian sect that believes that there is "that of God in every one" and that all individuals receive and perceive the word of God.

That being the case, Quakers need no formal creed or paid clergy to direct them as individuals or as a group. Friends' traditional weekly services consist of a gathering in a meeting house, with no leader or clergyman, no prearranged service and no sermon. Members may sit in silence for the entire meeting or instruct each other or simply announce personal thoughts, feelings or revelations. They believe strongly in universal education for their children and founded one of the strongest school networks in colonial America.

The society was one of many Protestant groups that appeared after the Reformation. It stressed individual responsibility, lay leadership of independent congregations and complete separation of church and state. The first known Quakers were followers of George Fox, an English lay preacher who, in 1647, began preaching the doctrine of "Christ within"—a concept that later evolved into the Quaker belief of an "inner light" within each individual. Believing that divine revelation is immediate and individual, Quakers often trembled as they experienced moments of divine revelation and thus earned a label that was originally meant to mock them.

Known originally as Children of Light and Friends of Truth, the Society of Friends interpreted Christ's words literally by refusing to take oaths and refusing to participate in war or violence or even resist attack. Because they refused to recognize any organized church, they also refused to pay tithes to the Church of England. Perceived as unpatriotic and atheistic, they suffered persecution and emigrated to the American colonies in the 1660s, settling first in New Jersey. After William Penn was granted the Pennsylvania colony, some 7,000 Friends migrated into that area to escape persecution in other states. Encouraged by Penn, they established schools wherever they settled. "There is scarcely any one thing," Penn wrote in 1679, "that so much needs the wisdom of the nation

in the contrivance of a new law as the education of our youth. . . ."

Starting with the Friends' Public School in 1689 (now the William Penn Charter School), the society opened more than 40 schools in the next 70 years, giving Pennsylvania the largest school system of any American colony. William Penn Charter, Friends' Central and German-town Friends all survive as Quaker schools in Philadelphia. Among the notable colleges established by the Society of Friends are Swarthmore College, founded in 1864 in Swarthmore, Pennsylvania, and Bryn Mawr College, founded in 1885, in Bryn Mawr, Pennsylvania. Both are now independent, secular schools.

No longer limited to Quaker students, they continue to apply traditional Quaker teaching methods, eschewing authoritarian methods, discouraging competition and encouraging students to learn for the sake of learning in a spirit of mutual cooperation. The commitment to noncompetitiveness and equal opportunity guarantees the least gifted equal opportunities to participate in athletics and other activities. Friends' schools are, however, private, with high academic standards and, therefore, highly selective in their admissions policies. In addition to fostering a rich educational system, the Quakers of the 18th century were pioneers in social reform, protesting slavery and opening the first schools to African Americans.

"friends of education" A referential title usually given to a coalition of mid-19th-century educational reformers who were responsible for spearheading the public school movement throughout most of the United States. Led by HORACE MANN in Massachusetts, the friends of education included amateurs, semiprofessionals and professionals associated with schooling in every state. They included attorneys, clergymen, teachers, editors, political leaders and industrialists. Besides Mann, the most notable were JAMES G. CARTER in Massachusetts, HENRY

BARNARD in Connecticut, J. Orville Taylor in New York, CHARLES FENTON MERCER in Virginia, CALVIN H. WILEY in North Carolina, CALVIN STOWE and CATHERINE BEECHER in Ohio, John Mason Peck in Illinois, JOHN D. PIERCE in Michigan and JOHN SWETT in California. They organized associations such as the American Institute of Instruction and the AMERICAN LYCEUM, and they published important periodicals such as the *American Journal of Education*, which allowed them to communicate with one another and share political techniques of successfully promoting public education by mobilizing public opinion and organizing political coalitions to enact enabling legislation.

Their task was not easy. As Horace Mann discovered in Massachusetts in the 1830s, most voting blocs opposed public education. Industrialists depended on children as the cheapest form of labor. Parents depended on children to help work their farms or to contribute to family income by working in factories and mines. The wealthy, who sent their children to exclusive private schools, saw no reason to pay taxes to educate other people's children. The clergy, who operated most private schools, feared state-run schools would cost them control of education.

Mann and the friends of education eventually convinced enough of their opponents that literate, educated children would earn more, bring more money home to their families, produce higher quality products in factories, produce more wealth for the nation (including the wealthy) and, as productive citizens, more likely become regular church-goers. Together they spread public education across the United States. Appearing in every state, they helped establish public school systems in every northern and western state.

With the exception of North Carolina, southern states refused to establish "northern-style" school systems that might eventuate manumission. After the Civil War, the FREED-

MEN'S BUREAU, an agency of the Department of War, imposed public schooling in the South as part of the military occupation. Because of its "northernness," southerners refused to give their wholehearted backing to public education for the remainder of the 19th and much of the 20th century. The result was a debilitating effect on academic quality in southern public schools that persisted until the end of the 20th century.

Froebel (or Fröbel), Friedrich Wilhelm August (1782–1852) German educator and founder of the kindergarten system, which allowed children to learn through play instead of formal lessons. A student and disciple of Swiss educator JOHANN HEINRICH PESTALOZZI, Froebel opened the world's first kindergarten in Griesheim in 1816. His "kindergarten movement" did not gain momentum until 1837, when he opened another kindergarten in Blankenburg, Thuringia, and established training courses for kindergarten teachers. His disciples opened kindergartens throughout Germany.

The first kindergarten did not open in the United States until 1873, when Susan E. Blow (1843–1916), a St. Louis teacher who had taken a kindergarten training course with a student of Froebel's widow, offered to open a kindergarten class and instruct a teacher in kindergarten methods free of charge if the St. Louis school system provided the teacher, the room and the equipment. WILLIAM T. HARRIS, the farsighted superintendent of schools, agreed. The kindergarten proved such a success that the concept rapidly spread elsewhere. Susan Blow devoted the rest of her career to training kindergarten teachers, and, by the end of the century, more than 225,000 American children were attending kindergartens. Most were based on Froebelian principles, with teachers engaging children in a variety of play routines, including story reading, singing, games and manipulative activities using col-

ored forms and shapes that allowed children to learn geometric and mathematical concepts intuitively.

Fulbright Exchange Program A program originally created under the Fulbright Act of 1946, which used the proceeds from the sale of surplus U.S. government property abroad to pay for the international exchange of professors and students. Developed by Senator J. William Fulbright (1905–95) to foster mutual understanding, the program was expanded in 1961 with passage of the Mutual Education and Cultural Exchange Act. The Fulbright-Hays Act, as the second law was called, provided for fellowships for American scholars and educators to study and teach overseas and for foreign scholars and educators to do the same in the United States. The program supports doctoral dissertations, group study and research projects, curriculum study projects and individual research.

In its first 50 years, the number of Americans sent abroad and foreigners brought to the United States by the Fulbright Program totaled about 250,000. Among the many American Fulbright scholars who rose to prominence were composers Aaron Copland and Philip Glass, writers Joseph Heller, John Updike and Eudora Welty, economist and Nobel Prize winner Milton Friedman, Harvard University president Derek Bok, and Senator Daniel Patrick Moynihan. Foreign Fulbright scholars have included United Nations secretary general Boutros Boutros Ghali, Brazilian president Fernando H. Cardoza, Greek prime minister Andreas Papandreu and Swedish prime minister Ingvar Carlsson.

A five-term senator from Arkansas, Fulbright became interested in foreign affairs during his student days at Oxford University in England. Much later, he became the long-time chairman of the powerful Senate Committee on Foreign Relations. Although an attorney by

training, he had spent four years teaching at George Washington University and the University of Arkansas, from 1935–39, and then served as president of the University of Arkansas from 1939–41. He was elected to the U.S. House of Representatives in 1942 and spent the rest of his career in public service.

In 2005, about 3,000 foreign students from more than 130 countries came to the United States under Fulbright auspices, and some 1,200 American students, out of more than 2,100 applicants, won Fulbright scholarships to travel overseas to study, teach English or engage in research. The majority of Fulbright scholars (and applicants) emerge from academically selective universities, with more than 20 scholars each from the University of Michigan (Ann Arbor), Harvard, Yale, Columbia, and University of California at Berkeley.

full-state assumption A policy whereby the state government assumes all funding for public schools. Attempted for the first time in Michigan in 1994, full-state assumption ended reliance for school funding on local property taxes, which produced funding inequities between rich and poor school districts. Although full-state assumption was first proposed in New York State in 1972, it remained only an interesting theory until the mid-1980s, when two populist revolts converged: opposition to soaring property taxes and outrage over what was perceived as a decline in the performance of public schools. Nearly half the funding for public school education in the United States is derived from property taxes, with most of the other half provided by the state and about 7% provided by the federal government. But per student spending ranges from less than \$2,000 in the poorest districts, with the lowest property values, to almost \$50,000 in the richest districts, with the national average just over \$6,000 in 2000.

Such inadequacies provoked lawsuits by civil libertarians in more than half the states during the 1980s. They were joined by taxpayers from the richest school districts, where some 70% of property owners had no children and protested excessive taxation to provide what they deemed to be luxurious facilities for children from a relatively small group of families. Both groups were joined by educational reformers who saw full-state assumption as a way for the state to establish higher, statewide educational standards and strip local district bureaucracies and elected school boards of control over education. By the end of 1993, courts in eight states had ruled that unconstitutional inequality did indeed exist in public school funding between wealthy areas, with high property values, and poor areas, with needier people and low property values.

To avoid costly court battles, Michigan's legislature agreed to provide more than two-thirds of all public school funds from higher state sales and cigarette taxes, leaving local property owners responsible for providing less than one-third of school costs through property taxes. (The situation had been reversed.) Moreover, the state agreed to guarantee every district in the state the same amount of annual funding per student, with a minimum guarantee of \$5,000 per student, regardless of the flow of revenues into state coffers. Despite the high hopes of its originators, full-state assumption did not eliminate discrepancies between rich and poor districts in spending per pupil, although it did improve the lot of some poor school districts. While average spending per pupil across the state climbed to about \$7,000, or about 13% above the national average, the dollar gap between the richest and poorest districts in Michigan remained at an astonishingly high \$2,500 per pupil after five years of full-state assumption.

full-time equivalent (FTE) An important calculation in higher education to convert the

number of part-time students or faculty into an equivalent number of full-time students and faculty. Because of the huge number of part-time students, especially at two-year colleges and four-year state colleges, college administrators need to calculate an FTE to obtain maximum utilization of school facilities. FTE is calculated by dividing the total number of credit hours being earned by part-time students by the number of credit hours in a full-time course load. Thus, if part-time students are enrolled in a total of 15,000 credit hours and 15 credit hours is a normal full-time course load, the full-time equivalent enrollment is 1,000 students. In other words, the college has the equivalent of 1,000 full-time students. Similarly, colleges need to convert the number of part-time faculty into an FTE to budget faculty salaries and to control faculty-student goals.

functional illiteracy A vague and often misleading term, usually defined as an inability to read, write or calculate well enough to function as an independent adult. Some definitions are more precise than others, variously pinpointing functional illiterates as adults who have not had eight years of formal education; adults who have not gone beyond the eighth grade; adults who cannot read, write or calculate above the eighth grade level; 16-year-olds who cannot read, write or calculate above the sixth grade level; adults who cannot read a bus schedule, order from a menu, understand newspaper articles, order from shopping catalogs or use want ads correctly.

The U.S. Department of Education's National Adult Literacy Survey conducts periodic studies of what it calls "prose literacy," "document literacy" and "quantitative literacy" of adults 16 and over. Its survey in the late 1990s found 21% of adults at the lowest level of prose literacy, that is, unable to write a simple description of the type of job they would like to have and able to do no more than locate

a single piece of information in a short text with no “distracters.” It found 23% at the lowest level of document literacy and, thus, unable to locate and use information from documents such as indexes, tables, paycheck stubs and order forms or even match money-saving coupons to a shopping list of several items. About 22% of the American population scored at the lowest levels of quantitative literacy, which required them to perform single, relatively simple numerical and arithmetic operations of daily life, such as adding two entries on a bank deposit slip. Rates varied widely according to age, race, ethnicity and levels of education. Only about 15% of whites demonstrated the lowest levels of literacy, while 40% of blacks were functionally illiterate and 46% functionally innumerate. Well over 50% of Hispanics were functionally illiterate and innumerate. About 75% of those who had dropped out of school before attending high school were illiterate and innumerate, and about 45% of high school drop-outs were functionally illiterate and innumerate.

(See also ILLITERACY.)

functional skills Skills essential for students or adults to function independently. Taught in special education, functional skills are broadly defined as those that require the assistance of others if students cannot learn them themselves. Essentiality for independent life management is the key to categorizing a skill as functional or nonfunctional.

fundamentalism An archconservative form of evangelism that developed in the late 19th century as evangelistic fervor seemed to dissipate with the spread of universal, secular public education. Spawned by DWIGHT L. MOODY, a charismatic leader of 19th-century revival meetings, fundamentalism was Moody’s response to the perception spreading among many Americans of the day that society was “a sink-

ing ship.” That perception may have been an outgrowth of several late 19th-century trends.

First, scientific explanations for phenomena ranging from electricity and telegraphic communications to the origin of man were threatening biblical authority. Second, popular interest in evangelism was declining in the face of the practical requirements of an expanding industrial nation. The study of engineering, mining, physics, chemistry, agriculture and other sciences and vocational skills grew far more important to the ordinary man than salvation. A third factor was the arrival of millions of non-Protestants—Catholics, Jews and others—who threatened the philosophical as well as political sway over American life that Protestants had held for more than 250 years. Even more threatening to evangelists was a growing ecumenical movement that sought to unite a number of sects. And another factor was the threat of integration of the races following the Civil War.

To halt what he perceived as America’s descent into Hell, Moody carried the fundamentalist message to college campuses, where he held revival meetings, organized libraries of evangelical literature and tried to convert secular campuses into religious institutions. Central to fundamentalist beliefs, however, was the absolute acceptance of the literality of the Bible—a concept that found less than universal acceptance on campuses where students were studying the most exciting new developments in electricity, mechanics, engineering, law and medicine. Moreover, many schools of theology were graduating a new breed of “modernist” clergyman who sought to reconcile Christian beliefs with contemporary knowledge and experience.

Rebuffed, the fundamentalists formed their own institutions and Bible institutes and adopted an even more aggressive approach. In 1909, the publication of the first books of a 12-volume work called *The Fundamentals* served to stir fundamentalist spirit to a fever pitch. When the last of the books was published in 1915, 3

million sets had been sold worldwide. In 1919, fundamentalists formed the WORLD'S CHRISTIAN FUNDAMENTALS ASSOCIATION, and in 1920–21, fundamentalists carried their doctrine of biblical infallibility in scientific and historical matters into public school classrooms and state legislatures across the United States. By 1925, four states had prohibited the teaching of Darwin's theory of evolution or any other theory that "denies the story of the Divine Creation of man as taught in the Bible. . . ." Three other states had only narrowly defeated such legislation. Although the laws passed in the 1920s were eventually repealed or declared unconstitutional by the U.S. Supreme Court, fundamentalist efforts to introduce biblically inspired "creation science" into the public school curricula of American public schools continue to this day.

Although interest in fundamentalism suffered a decline during the economic depression of the 1930s and the war years of the 1940s and early 1950s, it experienced a stunning revival during the 1960s and 1970s in response to civil rights legislation and the racial integration of public schools. Throughout the South, fundamentalists established private, all-white CHRISTIAN SCHOOLS to bypass court-ordered desegregation of the races in public schools.

Fund for the Advancement of Education An experimental FORD FOUNDATION division that sought to improve teacher training, promote citizen interest in education, introduce new technologies into classrooms, support civil rights in education and promote national assessment and school ACCOUNTABILITY in education. After spending \$65 million over 16 years, from 1951 to 1967, the fund became the Education and Research Division of the Ford Foundation.

Fund for the Improvement of Post-Secondary Education (FIPSE) A U.S. Depart-

ment of Education division created in 1972 to award grants for eight types of educational programs to reform postsecondary education by improving career training, introducing new methodology and modern equipment in classrooms, and reforming administrative procedures.

Future Farmers of America (FFA) A national organization of high school students, aged 14 to 21, preparing for careers in agriculture or occupations related to agriculture. Established in 1928, FFA has hundreds of thousands of members in thousands of chapters in every state and in Puerto Rico. Supported by funds from its own foundation and by business, industry, private organizations and individuals, FFA provides educational materials and programs, sponsors member meetings and conventions and publishes the bimonthly *Future Farmer*, which it distributes to all members.

Future Homemakers of America (FHA) A national, vocation-oriented organization for high school students enrolled in home economics and related courses. Founded in 1945 as a sister organization of the FUTURE FARMERS OF AMERICA, FHA's primary goal is "to help youth assume their roles in society through Home Economics Education in areas of personal growth, family life, vocational preparation and community involvement." Sponsored jointly by the American Home Economic Association and the U.S. Department of Education, FHA has more than 10,000 chapters in middle, junior and senior high schools in every state, but its membership has dropped steadily from a peak of nearly 550,000 in 1965 to fewer than 250,000 today. There are two types of chapters: one for consumer education, homemaking and family life education; the other to prepare students for jobs and careers.

Future Teachers of America A defunct national organization founded by the National Education Association in 1937 to generate interest in teaching careers among high school

and college students. It was “disestablished” in 1975, when the NEA decided to turn responsibility for career development over to state and local educational associations.

Gallaudet, Thomas H. (1787–1851) Pioneer educator of the hearing-impaired and founder of the first U.S. school for the deaf. Born in Philadelphia, he was a graduate of Yale University and Andover Theological Seminary, but gave up the ministry in favor of education after becoming deeply interested in teaching the deaf-mute child of a family friend. This friend, with the help of others interested in education of the deaf, sent Gallaudet to study methods of teaching the deaf in England and France. After studying at the Institut Royal des Sourds-Muet in Paris for several months, he returned to the United States in 1816, bringing with him Laurent Clerc, a brilliant young teacher from the Institut. He spent the following year raising funds from private sources and from the Connecticut state legislature, and in 1817 he opened a free school for the deaf in Hartford—the first such school in the country. He served as principal of the Connecticut (later American) Asylum until his retirement in 1830, gradually enlarging the school and training teachers who went on to establish similar schools elsewhere. Among the latter were two of his sons: Thomas (1832–1902), an Episcopal priest, opened Saint Ann’s Church for Deaf-Mutes in New York City and founded the Gallaudet Home for elderly deaf-mutes in Poughkeepsie, New York; Edward helped found what later became GALLAUDET UNIVERSITY, the world’s first institution of

higher education for the hearing impaired, in Washington, D.C.

After his retirement from the Connecticut Asylum, the elder Gallaudet spent the rest of



Statue of Thomas H. Gallaudet, at Gallaudet University
(Gallaudet University)

his life promoting progressive educational causes, including educational opportunities for women and for blacks, the establishment of teacher training schools, and the establishment of vocational schools.

Gallaudet University The world's only liberal arts university for the hearing-impaired. Founded in 1856 as a school for the deaf and blind, the Washington, D.C., institution has nearly 1,700 students enrolled in its four-year college, which offers B.A. and B.S. degrees in the full range of liberal arts, fine arts, business, engineering, sciences and education. The graduate school offers master's degrees in audiology and education and doctoral degrees in special education to about 400 students. Subsidized a \$400 million annual grant from the federal government, Gallaudet is named for pioneer educator THOMAS H. GALLAUDET, whose youngest son, Edward M. Gallaudet (1837–1917), helped found the school and served as the institution's first president. The young Gallaudet was teaching in his father's school for deaf children in Hartford, Connecticut, when a group in Washington, D.C., asked him to help



Entrance to Gallaudet University, the world's only institution of higher education for the hearing impaired (*Gallaudet University*)

organize and run a school for the deaf. In 1857, he organized the Columbia Institution for the Deaf, Dumb, and Blind and served as principal, pioneering the combined system of speech and lip reading to educate the deaf. He then established the world's first college curriculum for the handicapped, and in 1864 he obtained financial support from Congress and the right to grant college degrees. In that year, the college was renamed Gallaudet, with Edward Gallaudet as president, a post he held until 1911.

games A pedagogical tool used in elementary, secondary and higher education, with significantly different meanings for each. In higher education games, students often assume specific "real-world" roles and play either in competition with or in cooperation with other students. Most games are extremely complex, mathematics-based procedures set up with predetermined rules, decision-making procedures and techniques for meeting player goals. Such games are often used in military, business and economics education.

At the elementary and secondary school levels, games with the more traditional childhood meaning are generally used to excite student interest and enthusiasm in various courses, particularly math. In 1992, 40% of almost 250,000 students in the fourth, eighth and twelfth grades failed to meet basic math standards, according to the U.S. Department of Education's National Assessment of Educational Progress. One result was the massive introduction by elementary school teachers of games designed to eliminate the fear of math that many children harbor and to make math more fun. In some classes, students spent 50% of their mathematics study time engaged in games, and some teachers claimed a 10% increase in student scores. Among the most popular games was "24," in which student players compete to see who can first analyze how to add, subtract, multiply and/or divide four given numbers and arrive at a result

of 24. Critics of games fear their excessive use and question the long-term academic benefits and emotional effects of associating "fun" with every academic exercise.

Garden, Alexander (?–1791) Scottish-born naturalist (after whom the gardenia was named), physician and missionary who in 1743 established a school for black children in Charleston, South Carolina—the first such school in the South. Named area representative of the SOCIETY FOR THE PROPAGATION OF THE GOSPEL IN FOREIGN PARTS (SPG), Garden opened a school in 1743 to teach black children to read and, in turn, to teach other blacks. The SPG's two broad goals were to perpetuate Anglicanism among Christian-born immigrants to the wilderness and to teach and Christianize the heathen. It was to the second end that Garden founded his school and persuaded SPG to purchase the freedom of two young slaves named Harry and Andrew, whom he trained as schoolmasters for his school.

Despite a South Carolina law banning the teaching of slaves, the school lasted 20 years and is known to have taught at least 60 black pupils, both freedmen and slaves, to read, write and calculate. Ironically, Garden had no training as, and did not set out to be, either a missionary or pioneer educator. A friend of Linnaeus, the Swedish scientist and father of modern botany, Garden had migrated to South Carolina as a naturalist to collect botanical, mineralogical and zoological specimens. A staunch British loyalist, he was banished from the United States to England in 1782.

Gary (Indiana) Plan A controversial school-reorganization program conceived in Gary, Indiana, in 1907 and adopted by more than 200 other American cities in the succeeding two decades. Devised by Gary's superintendent of schools, William Wirt (1874–1938), the plan was intended to accommodate a swelling

population of uneducated immigrant children and to expand the role of the school into a community center to educate adults, children and immigrants.

A student of JOHN DEWEY and a proponent of Dewey's philosophy that democracy must be taught in the classroom, in 1907 Wirt arrived in the newly created steel town of Gary determined to expand the curriculum and offer a combination of general, vocational, academic and moral education in each school. He converted an appropriate number of classrooms into laboratories, machine shops and other vocation-oriented "instructional stations." To ease overcrowding and reduce the need for traditional classrooms, he introduced a two-platoon system that put one-half the children into traditional classrooms in the morning to learn traditional academic subjects, while the other half learned specialized subjects in the various instructional stations. The platoons switched places in the afternoon. He expanded the teaching and recreational capabilities of each school still further by establishing ties to neighborhood libraries, playgrounds, parks and gymnasias, thus allowing children to spend part of their school days in each of these other facilities. He also lengthened the school day to permit working adolescents and adults to take advantage of the school program. Some schools remained open 24 hours a day to fill the educational needs of the immigrant population.

In the end, a Gary school could accommodate twice as many students as a traditional school, with fewer classroom teachers, and it was this aspect of the Gary Plan, with its obvious economic advantages, that enticed other cities to adopt it. Although some communities hailed it as "a synthesis of the best aspects of the progressive 'schools of tomorrow,'" others rebelled. Rioting erupted at Gary Plan schools in Manhattan, Brooklyn and the Bronx in 1917, when New York labor unions, teacher unions and immigrant groups protested that the plan

represented a cheapened, contracted and inadequate form of education. The protests helped Republican candidate John F. Hyland sweep Fusion Mayor John Purroy Mitchel out of office, and the Gary Plan out of New York City schools.

Gates, Arthur I. (1890–1972) American educational psychologist who pioneered techniques for teaching reading and language skills to young children and developed a variety of tests to measure reading skills. Born in Minnesota and educated in California, he was the author of more than 300 books and articles on education and psychology. He was a member of the Columbia University Teachers College faculty in New York from 1917 to 1956, served as director of the Institute for Educational Research at Columbia (1921–30) and headed the department of educational research in Columbia's Advanced School of Education (1933–37).

In 1928, Gates developed the "Intrinsic Method" for teaching reading, a method that translated theoretical findings on how children learn to read into practical classroom teaching techniques. The Intrinsic Method defined the basic skills needed for reading, identified problem areas and provided systematic, graded teaching materials that allowed teachers to lead students step-by-step through the learning process.

Gates also developed a variety of diagnostic tests, including the widely used Gates-MacGinitie Reading Tests and the Gates-MacGinitie Reading Readiness Test. The former measures vocabulary, comprehension, speed and accuracy for students in grades 1–12. The Reading Readiness Test is designed for students about to begin reading and measures listening comprehension, auditory and visual discrimination, ability to follow directions, letter recognition, visual-motor coordination and word recognition.

Gates Foundation See BILL AND MELINDA GATES FOUNDATION.

gaudeamus igitur The first words of a university-students' song, variously said to have been composed as early as 1267 (*Bartlett's Familiar Quotations*) and as late as 1700 (*Yale University Song Book*) or somewhere in between (15th-century France, according to the *Oxford English Dictionary*). Of obscure origins, "Gaudeamus" appears to have been a poem first. It was written in the late Latin that was spoken by students and faculty in English and European universities from the Middle Ages through the 19th century. Its melody may date back to 15th-century France (*Oxford Dictionary*) or 18th-century Germany (*Yale University Song Book*). Whatever its origins, "Gaudeamus" has been a universally popular students' song at festive occasions throughout the Western world for several centuries. Indeed, Johannes Brahms (1833–97) used it as the central theme in his *Academic Festival Overture*, composed in 1880 for festivities at the University of Breslau. Still sung by many college glee clubs, its opening measure, "Gaudeamus igitur, Juvenes dum sumus," calls to students: "Then let us be merry while we are young." The student singers go on to wish their teachers long life ("Vivat academia, Vivat professores") and pray that the school that educated them will flourish ("Alma Mater floreat, Quae nos educavit"). Throughout the 18th and 19th centuries, the word *gaudeamus* was routinely used as a noun connoting merrymaking, as in "at our *gaudeamus* this year, we drank wine *more majorum*" (Sir Walter Scott's *Family Letters*).

gender discrimination In education, the denial of equal educational opportunities because of a student's sex. Despite the existence, since 1972, of federal and state laws making gender discrimination in education illegal, de facto gender discrimination per-

sists—a result, perhaps, of the unconscious as well as conscious prejudice of educational authorities, including female teachers. Two landmark research projects revealed ample evidence of such discrimination over the last decades of the 20th century, when gender discrimination had been banned by law and a myriad of court decisions: One was a 20-year study by Myra and David Sadker of American University, and the other was a 1992 study by the AMERICAN ASSOCIATION OF UNIVERSITY WOMEN (AAUW).

The two studies found that both male and female teachers called on boys more often than girls, asked boys harder questions, gave them more time to answer, gave boys more praise

and criticism than girls, and gave boys more extra help. Teachers directed two questions to boys for every one directed to girls, and they allowed boys to shout out answers but reprimanded girls for doing so, with the result that boys were eight times more likely to shout out answers than girls. Many science and mathematics teachers tended to ignore female students altogether, with the result that girls tended to abandon the study of mathematics and science as soon as they fulfilled their minimum requirements for high school graduation. At the end of the 1900s, when more than 50% of American homes had at least one personal computer, girls made up only 17% of high school students taking the College Board's



American women of the colonial era engage in one of the most popular domestic arts—quilting. Women's education was limited to the domestic and ornamental arts. (*Library of Congress*)

Advance Placement examination in computer science. When confronted with the findings, teachers often excused their conduct by asserting that boys tend to get rowdy if teachers don't keep them actively involved: Asking boys more questions was seen as a way of controlling student behavior.

The study also found that many schools and teachers continued to use textbooks in early grades that perpetuated gender discrimination with stories depicting boys as doctors and girls as nurses. The studies found that female academic performance declined as girls progressed through primary school, secondary school and college. Although their grades averaged higher than those of males during primary and secondary school, male grade-point averages were 25% higher than those of females in college. The gender gap was especially startling in the sciences and mathematics, where men's scores averaged from 32% to 57% higher than those of women, despite a federal program to encourage women in science and math and a plethora of federal and state laws banning gender discrimination. Women outscored men only in German, English composition and literature—and only by about 4%.

Moreover, as they reached college, women tended to enroll in such academic areas as literature, music and art, the traditional "ornamental arts" that women were forced to study in the 19th century, and to shy away from studies in science, mathematics and engineering, which would give them far more options in the 20th-century job market after graduation. The result, as the study pointed out, was that women with four years of college did not exceed the average earnings of men with high school diplomas. In contrast, a U.S. Department of Education study that tracked more than 12,000 men and women from high school graduation until they were 32 found that women who took more than two college-level mathematics courses achieved pay equity with men.

In addition to uncovering gender discrimination in teaching practices and textbook publishing, other studies revealed unsettling differences in male and female performances in a variety of standardized tests used for college admission and scholarship awards. It is not clear whether the tests were themselves biased or whether they simply reflected the bias of the school and classroom. For example, girls scored only about 1% lower than boys in the verbal Scholastic Aptitude Test (now SCHOLASTIC ASSESSMENT TEST) used prior to 1994 by many colleges as a college admission test and widely seen as a gauge of future academic performance at college. In the mathematics Scholastic Aptitude Test, however, girls' scores averaged more than 9% below those of boys. Girls with three or more years of high school mathematics obtained about the same math SAT scores as boys. Moreover, a study of 47,000 students, published in the *Harvard Educational Review* in 1992, paired men and women in college math courses on the basis of each member of the pair getting the same grade in the same course. The study found that women taking the same college math courses and getting the same grades as men had nevertheless averaged 33 points lower on their SAT mathematics tests, which were used in determining whether or not to admit them. The SATs are designed to predict how well students will do academically during their first year at college, but, despite lower SAT scores among girls, they consistently outperform boys in all subjects during their first year at college. Such findings have convinced many academically selective colleges and universities to reduce the importance they give to SAT scores in the college admissions process. Harvard, for example, now accepts the ACT ASSESSMENT PROGRAM's college entrance examinations in lieu of SATs, because ACT tests seem to reflect student in-class academic performance more accurately. Despite repeated, intensive efforts by the College Board to root out the sources of gender dif-

ferences in SAT performance, average male verbal scores remain stubbornly fixed at more than 1% above those of females, while average mathematical scores remain more than 7% above female scores—about the same as they have been for the past 30 years. In contrast, average female scores on ACT English college entrance examinations are more than 4% *higher* than those of males, while female math scores are only about 5.6% below those of boys.

The gender differences in SAT scores provoked a successful 1989 lawsuit by the National Organization for Women that forced the New York State Board of Regents to abandon its use of SAT scores to award Regents Scholarships. At the time, girls won only 43% of the scholarships. When the state was forced to change its policy and use high school grade-point averages as a determining factor, girls won 51% of the scholarships.

The American Civil Liberties Union (ACLU) and the National Center for Fair and Open Testing, of Cambridge, Massachusetts, filed a similar lawsuit against the EDUCATIONAL TESTING SERVICE and the College Board, which administer and sponsor the Scholastic Assessment Tests and the PRELIMINARY SCHOLASTIC ASSESSMENT TEST. The latter is a “practice” test for the SATs taken by high school juniors, a year before they begin the college application process. Although never seen by colleges, it is used by the NATIONAL MERIT SCHOLARSHIP Corporation to award college scholarships. Every year, more than 1 million high school juniors take the PSATs. Although 55% of those who took the test were girls at the time of the 1994 ACLU lawsuit, more than 60% of the scholarship winners were boys, and the ACLU charged that reliance on what it alleged were gender-biased PSATs for scholarship awards constituted a violation of federal equal-opportunity laws. In 1997, the College Board agreed to augment the PSAT with a multiple-choice test on writing, and subsequent results showed that girls had narrowed the gap with boys on the ver-

bal portion to 2.7 points from 4.5 points. Although girls traditionally score higher on such tests than boys, the addition of a similar test to the SATs has done little to equalize relative gender performance.

Although most American educational institutions have attempted to eliminate overt gender discrimination, its traces are hard to erase. They appear to date from the earliest human societies and man’s assumption of the role of hunter and fighter, while woman remained behind to bear and raise children and care for the home. God centered religions indoctrinated their followers in the belief that women were naturally weaker and inferior to men. In the Christian Bible, St. Paul urged Christian wives to be obedient to their husbands. Hinduism promised virtuous women the reward of rebirth as men. Ancient Greece and Rome reserved education for men, while women’s education was limited to learning domestic skills. Gender discrimination in the United States goes back to the arrival of the first settlers. English common law was clear: “husband and wife are one, and man is the one.” Girls (and boys) were the property of their fathers, and women were the property of their husbands, with no control of their persons or their children, no right to own land or money and no right to an education other than to learn the domestic and ornamental arts. The former were those required for raising children and running the household; the ornamental arts included singing, dancing and other skills needed to amuse husbands and “ornament” their households.

The accumulation of wealth in the colonies sowed the seeds of change, however, as families of means began sending their daughters to private academies where they learned to read literature other than Scripture, as well as writing, calculating and other skills. One of the books they read in the wake of the American Revolution was Mary Wollstonecraft’s *Vindication of the Rights of Woman*.

Written in 1792 at a time when popular demands for greater individual liberties were provoking uprisings throughout the Western world, it inspired such academy graduates as Catherine Beecher, Emma Willard and Mary Lyon to launch the women's educational rights movement. Beecher and Lyon opened academies that offered women college-level education, and in 1837 Lyon founded the world's first college for women in Mount Holyoke, Massachusetts.

Many far-sighted men supported the women's education movement, recognizing that women, as mothers, served as the first teachers and caretakers of America's children. As such, their education would determine the early education of future generations. Those propounding what was known as "Republican Motherhood" argued that if any free, white boy could someday become president, then all male citizens needed the proper moral and intellectual training to become informed voters, and women would have to be properly educated to give them this training.

By the end of the 19th century, women had taken control of the teaching profession in elementary schools across the United States, and outstanding women's colleges had been founded throughout the country. Although coeducation remained the exception, both Harvard and Columbia had established affiliated, subsidiary colleges for women.

The state-by-state passage of compulsory education laws and the federal granting of woman suffrage after World War I provoked a vast expansion in women's education, but gender discrimination in education was not outlawed until 1972, with the enactment of Title IX of the Education Amendments of 1972 prohibiting discrimination on the basis of sex in educational institutions receiving federal aid. Title IX forced formerly all-male institutions to open their doors to women, thus giving women the same educational rights as men for the first

time in American history. By 1994, more than half of all college students were women, and their numbers had grown dramatically in medical, law, business and other traditionally male graduate schools.

By spring of 2007, women accounted for nearly 62% of all associate degrees and more than 59% of bachelor's degrees awarded at American colleges, compared to 55% and just under 50%, respectively, 25 years earlier. At the graduate school level, the gains were even more dramatic. In 2007, women accounted for more than 60.5% of all master's degrees, almost 52% of all professional degrees and 48.5% of research doctorates in 2007, compared to 50%, 26.6% and 31.1%, respectively, 25 years earlier. The ascent of women to virtual parity with men in higher education had disastrous effects on SINGLE-SEX EDUCATION, where the role of all-women's colleges as springboards to success in previous all-male occupations in the workplace all but disappeared. Prior to parity, coeducational colleges and universities had been male-dominated environments, with huge stadia and arenas for hundreds of thousands of paying spectators watching male sports—and a handful of scantily clad female cheerleaders jumping frantically along the sidelines. Serious female scholars tended to attend single-sex women's colleges, which represented fewer than 5% of all American institutions of higher education, but graduated disproportionately large numbers of women entering professional fields such as engineering, medicine, law and the sciences. Indeed, five all-women's colleges—Barnard, Bryn Mawr, Mount Holyoke, Smith and Wellesley—accounted for 43% of the math doctorates and 50% of the engineering doctorates earned by women in the 1970s and 1980s, and one-third of the female board members of Fortune 1,000 companies were graduates of women's colleges.

Although gender discrimination had disappeared by the year 2000 in terms of college and

university enrollments, the long-term effects of admissions parity had yet to be felt at the faculty and administrative levels in many areas of American education. Although women made up nearly 75% of all public school teachers, they made up less than 35% of the principals and only about 13% of school superintendents. In higher education they accounted for only 33.2% of full-time instructional faculty, less than 18% of full professors and only 16.5% of college presidents. At the administrative level of higher education, however, women had made notable strides by the end of the 20th century, filling nearly 20% of all college presidencies in 1998, compared to fewer than 10% in 1986. More than 15% of the presidents of public, doctorate-granting universities were women in 1998, compared to 4.3% 12 years earlier. They accounted for 9.5% of the presidents of comparable private universities, compared to fewer than 3% a decade earlier. At four-year colleges granting only bachelor's degrees, women accounted for 23.4% of the presidents at public institutions and 20% of the presidents in the private sector. At the two-year college level, women made up 22.1% of the presidents in the public sector and 25% of the presidents at private two-year colleges.

Nonetheless, gender discrimination continues to pervade American academia and women faculty earned from 7% to 13% less than their male counterparts in identical positions in the 2005–06 academic year:

Rank	Men	Women	Differential
Instructors	\$41,692	\$40,431	3.1%
Lecturers	48,776	44,573	9.4%
Assistant professors	58,296	54,052	7.85%
Associate professors	68,990	64,436	7.1%
Professors	97,642	85,747	13.9%

IVY LEAGUE colleges and universities—among them the oldest, most academically prestigious

and costliest private institutions of higher education in the world—seem particularly prone to gender discrimination. Once all-male institutions, the eight “Ivies” were among the first single-sex institutions to end gender discrimination in admissions, but their progress in ending it in faculty hires has been the slowest in higher education, women making up only 38% of these institutions' faculty and only 25% of their tenured faculty in 2003.

Gender discrimination remains rampant, as well, in the general marketplace, where myths persist about the innate inferiority of women in mathematics and technology-related fields, despite identical mathematics proficiency scores between girls and boys at every age in nationwide testing of elementary and secondary school students by the U.S. Department of Education. The University of North Carolina confirmed the results with its own study of 20,000 math scores of students between the ages of 4 and 18. Nonetheless, women make up only 19% of the science, engineering and technology workforce, and they earn only 19% of bachelor's degrees in engineering and 11.5% of bachelor's degrees in engineering-related technologies.

(See also ACADEMIC RANK; WOMEN'S EDUCATION; DISCRIMINATION; CIVIL RIGHTS ACT OF 1964; etc.)

General Aptitude Test Battery A group of 12 tests developed by the U.S. Department of Labor's Employment Service and useful in vocational education to measure intelligence, form perception, motor coordination, clerical perception, finger dexterity, manual dexterity and verbal, numerical and spatial aptitude.

General College of the University of Minnesota An experimental two-year program started in 1932 that proved to be the precursor of the modern community college. A source of enormous controversy at the time, the program was the idea of university president LOTUS

COFFMAN, who believed that the state had an obligation to extend education to all people, regardless of age. Considered an eccentric experiment in progressive education, the General College offered a two-year degree-granting program of survey courses in 10 "areas of human living": human biology; home and family life; the arts; history and government; literature, speech and writing; physical science; psychology; social problems; and contemporary affairs. Segregated from the rest of the university, the college opened its doors to all applicants and assigned them to courses according to their scores on tests and their previous academic records, if any. Starting with 461 students in the autumn of 1932, the college rapidly expanded to more than 1,000.

Although ridiculed by professors and some university students as a "dumbbell college" with a "watered down curriculum," the General College generated enormous public enthusiasm, along with considerable financial support from such foundations as the GENERAL EDUCATION BOARD and the CARNEGIE FOUNDATION FOR THE ADVANCEMENT OF TEACHING, which were eager to promote universal education in the United States. The General College became a model for similar schools of general studies at state universities in Oregon, Georgia and Washington. Eventually, virtually all state and many private universities opened similar schools. And, as the student population expanded in the 1950s, state universities built community colleges to offer general studies programs in smaller communities throughout each state.

general education Usually a reference to a peculiarly American, public high school, curricular program or "track," offering a variety of "self-improvement" courses and rudimentary courses in English, mathematics, science and social studies. The term general education was first used and defined in a landmark 1945

report by the Harvard Committee, *General Education in a Free Society*. The report defined a core curriculum that all students, whether pursuing vocational or academic education, should, "as citizens and heirs of a joint culture," study. It consisted of three years each of English, mathematics and science and two years of social studies. Students would then be left with about one-third of their high school hours for electives in business courses, the arts, agriculture, home economics "and a thousand other practical fields."

The term lost its meaning as many public high schools adopted ability-grouping programs that segregated students into so-called tracks, with the highest academic achievers in the college-bound or honors track. Those uninterested in academics but with adequate manual skills were placed in the vocational or business track, and the rest were placed in an undemanding "general" track, loosely based on the original Harvard Committee general education concept, but made up of courses with only the rudiments of English, mathematics and science and no homework or assigned, off-campus reading.

Recognized by leading educators as "the academic and vocational desert of American education," general education has proved the worst failure in the history of American public education. "It relates to nothing, leads to nothing and prepares for nothing," warned Dale Parnell, the long-time president of the American Association of Community and Junior Colleges. About 25% of American high school students enroll in general education programs, but more than 60% of them drop out without completing high school. Of the more than 1 million general education students who dropped out of school in 1993, 37% remained unemployed a year after leaving school, and those with jobs earned an average of just under \$8,000 a year. Two states then outlawed general education programs, and the governors of

the 50 states unanimously condemned such programs at various conferences. Twenty states have since adopted standards that require all students to achieve at least a 10th grade level of competence in English, math, science and social studies to graduate.

In 1994, Congress tried to end general education by passing the SCHOOL-TO-WORK-OPPORTUNITIES ACT, a federal law requiring states to establish education programs in all public schools to prepare students either for continuing education or provide them with the skills necessary for gaining entry into the job market after graduating from high school. In effect, the law ended all federal funding for general education, which provides neither of these outcomes, and it forced schools to begin developing effective new curricula for work-related vocational education to guarantee each student either a high school diploma (or equivalent), a nationally recognized skill certificate or an associate degree that will lead to a first job or further education. Funded with more than \$1.5 billion in federal monies, the School-To-Work Opportunities Act provided financial and legislative impetus to the specialized "VO-TECH" and COOPERATIVE VOCATIONAL EDUCATION programs already functioning in about 500 forward-looking public school districts.

General Educational Development (GED) Program A group of standardized examinations that anyone of any age may take to obtain a high school diploma, without attending formal classes. Open to persons who, for whatever reasons, never obtained a high school diploma, the GED program is offered and administered in every state by the G.E.D. Testing Service, a part of the nonprofit AMERICAN COUNCIL ON EDUCATION in Washington, D.C.

Also called the High School Equivalency Testing Program, the seven-and-one-half-hour GED examination consists of five tests, each made up of multiple-choice questions that

measure writing skills, reading comprehension, and understanding of social studies, science and mathematics. Test 1 measures spelling, punctuation and grammar skills and requires a 200-word essay to demonstrate ability to organize ideas in clear, correct sentences. Test 2 measures understanding of social studies and asks for the interpretation of a series of passages dealing with social, political, economic and cultural problems. Test 3 tests knowledge of the natural sciences, and Test 4 deals with understanding literature and the ability to interpret various selections of poetry and prose. Test 5 measures abilities in mathematics and covers ratios, percentages, decimals, fractions, measurement, graphs, plane geometry and algebra.

To pass and receive a high school diploma in most states, test-takers must obtain a minimum of 35 points (out of 100) on each test, but earn a total score of at least 225 points for all five, or an average of 45 points per test. GED courses to prepare for the test are available (often free of charge) at many public high schools and community colleges, and various GED home-study books are available in major bookstores. Although the Council on Education sets its own minimum pass-fail standards, each state may establish its own standards above the national minimum. Each of the tests is scored within a range of 20 to 80, with the national standards requiring test takers to score a minimum of 40 on each of the five exams and obtain a total overall score of at least 225 points to earn a GED diploma. Among the states requiring higher scores, New Jersey, for example, demands a 42 in writing and 45 in math for a student to pass. Candidates can take the test up to three times in any given year. About 65% of the 500,000 to 1 million men and women who take the GED each year pass the tests and receive high school diplomas.

GED originated in 1942, when the Veterans Testing Service designed an accelerated program for service personnel whose high

school education had been interrupted by the draft and World War II military service. After a half-century, some studies now indicate that the quality of GED education is far below that of standard secondary school education. One study found that average earnings of holders of GED diplomas are no higher than those with no high school diplomas and considerably below high school graduates. Indeed, the U.S. Armed Services stopped accepting recruits with GED diplomas in the early 1990s because they consistently failed basic training and were dismissed from the military at twice the rate of recruits with traditional high school diplomas.

Although many GED students are adults compensating for previous decisions to abandon formal schooling (the vast majority completed 11 years of formal education), some surveys of GED diploma holders found significant numbers who had purposely abandoned traditional high school studies to enroll in the GED program because it was less demanding. About 40% of GED test takers are 19 years old or younger, 26% are 20 to 24, 11% are 25 to 30 and 22% over 30. GED programs account for about 25% of all high school diplomas in the United States, and more than 25% of GED holders go on to earn associate degrees or higher.

General Education Board A philanthropic organization for education, founded and funded by John D. Rockefeller in 1902. Although strongly supportive of segregated, "separate-but-equal" schooling of blacks and whites, the board nonetheless promoted the concept of universal education in the South and attempted to make black schools equal academically to those for whites. To that end, it funded major improvements and expansions of black schools and colleges. The board also supported the development of the GENERAL COLLEGE OF THE UNIVERSITY OF MINNESOTA, a two-year program founded in 1932 that was the precursor of American COMMUNITY COLLEGES.

General Electric Co. Perennially one of America's and the world's largest private corporations and a pioneer in vocational education and the development of CORPORATION COLLEGES AND SCHOOLS. As early as 1900, General Electric Co. had established four-year apprenticeship programs at its plant in Lynn, Massachusetts, where the company provided both academic and shop instruction during working hours. Designed to provide each apprentice with the knowledge and skills to "reach the top" of the company, the program began with two years of classroom instruction, with courses in arithmetic, elementary algebra and trigonometry, mensuration, elements of machines, power transmission, strength of materials, mechanics, elementary electricity, mechanical drawing, machine designing, and jig and fixture designing. Following completion of their studies, apprentices ran errands and performed unskilled labor until the foremen in charge decided they were ready to move up to simple bench work such as chiseling and filing, cleaning small tools, and materials handling in stockrooms. When deemed ready, the majority of apprentices moved to a special part of the plant to begin training as tool and die makers or machinists under the supervision of a mechanic gifted with teaching skills. The rest of the apprentices moved into pattern making and foundry work.

general languages A once-common junior high school course that prepared students for the study of foreign languages by studying the etymology and construction of English words and the history of language and language development. Students learned the alphabets and basic words and sentence construction of ancient languages such as Latin and Greek, from which many modern European languages evolved. General language courses usually also included a brief study of the rudiments of various modern foreign languages.

General Motors Institute The first degree-granting corporation-owned college. Founded in 1919 as a training school for apprentices and other new employees, the institute became a degree-granting college in 1945, offering bachelor of science degrees in engineering, with specialties in manufacturing, mechanical engineering, industrial engineering and electronic engineering. Later called the GMI Engineering and Management Institute and since renamed Kettering University, the college has more than 2,500 undergraduate students who must complete a five-year program, alternating 12 weeks on campus and 12 weeks on the job. Nearly 20% of the students are women.

Although most undergraduate courses are in science, engineering and computer science, Kettering does offer a business administration program, and it requires 18 hours of humanities and communication courses that teach students to write reports and make oral communications. Kettering also has a graduate school with 700 students, offering master's degrees in engineering. The school became independent of General Motors Corporation in 1982, and it now draws students from many other companies. GMI changed its name to Kettering University to honor Charles Franklin Kettering, the long-time president and research director at General Motors Corporation, whose heirs continue serving on the Kettering/GMI board of trustees.

(See also CORPORATION COLLEGES AND SCHOOLS; FACTORY EDUCATION.)

genius A vague and often misused "catchall" term referring to any person of exceptional talent or intellectual ability. Sometimes defined as anyone with a measurable INTELLIGENCE QUOTIENT (I.Q.) of 140 or more, the word genius dates back to Roman mythology and the belief that every individual, family and city had a protecting spirit or *genius*. The word is not unlike *genie*, which is derived from the Arabic *jinniy*, meaning a demon or supernatural spirit

that may take human form and serve its human summoner. Often depicted as a winged youth, the Roman *genius* was a household god worshiped in the hope that he would bestow intellectual powers and success on his believers.

LEWIS TERMAN, the Stanford University professor of education and psychology who pioneered intelligence testing, also pioneered the study of genius. Beginning with 1,000 12-year-old California boys and girls with high I.Q.'s in 1922 and adding another 528 students in 1928, Terman and his associates measured all aspects of their physical, intellectual and social characteristics. They also measured similar traits of the children's parents, teachers and other mentors (and eventual spouses); examined their environments and genetic histories; compared them with children with normal and low I.Q.'s; and then arranged to monitor them throughout their adolescence, adulthood and maturity. In-depth studies of the original students were made in 1922, 1927–28, 1936, 1939–40 and 1955. Although Terman died in 1956, others continued the studies until 1972, eventually resulting in a massive five-volume work that all but erased most popular myths about geniuses.

(See also GIFTED.)

geography The science that delineates and describes the physical and cultural characteristics of the world. Taught for centuries as a separate subject in elementary and secondary schools, it has been absorbed into the social studies courses of most American public schools since the early 1960s and has all but disappeared from the curriculum as an independent subject. As a result, 30% of American high school seniors had a substandard knowledge of geography at the beginning of the 2000s. About 40% had a basic knowledge and only 30% demonstrated what the Department of Education described as proficiency.

As late as the mid-20th century, a thorough knowledge of geography was required for

admission to most selective colleges, and most junior high schools required students to study geography as a full-year course, complete with textbooks and homework assignments. Geography courses included the study of the physical characteristics of the Earth, including its climate, land and water formations, plant and animal life and its geological history and evolution. Cultural geography included the study of the evolution of animals and man, and the development of artificial geological entities such as settlements, cities, nations and other modifications imposed by man on the physical geographic environment. Then, as now, geographical concepts were also integrated into conventional elementary and secondary school history and social studies courses.

At the university level, geography remains a separate and distinct science, usually broken down into seven categories: systematic geography (the classification and broad study of the spatial aspects of geographic phenomena); physical geography (the study of the Earth's geology, climatology, plant and animal life, soil and water, and the methods of mapping each); cultural, human or economic geography (the study of the world's resources, labor supplies, manufacturing facilities and transportation and communication facilities in relation to the human population's social life and distribution); regional geography (the differences and similarities of the Earth's various regions and the specific geographic characteristics that make each region unique); historical geography (the geological and cultural changes that history has wrought); data collection; and cartography, or mapping (the study of the methods required for a career as a professional geographer or cartographer).

geology The study of the history, shape and physical and chemical makeup of planets, but especially of the Earth. It includes the study of all forces that shape the Earth's exterior and

interior—rocks, soils, waters, atmosphere, life forms, other bodies in the solar system, and so on—and the interaction between them. Thales of Miletus is believed to have been the first person to ponder scientific geological questions in sixth-century B.C. Greece. Later contributors to geologic thought ranged from Aristotle, in the fourth-century B.C., to Leonardo da Vinci, in the 15th century A.D. But the first geoscientists, in the modern sense, did not emerge until the 16th and 17th centuries, with the development of studies in so-called natural philosophy.

Geology gradually entered the curriculum of American colleges in the late 17th and early 18th century, as the colleges evolved from theological to secular institutions. As mining developed into a major industry in the century that followed, geology became an integral element of the secondary school and college curricula, a position it retains today. Usually called "earth science" at the secondary school level, geology is divided into two broad categories: historical and physical. The former deals with the evolution of the Earth's surface and life forms and includes paleontology, stratigraphy, paleogeography and geochronology. Physical geology examines the forces that shape the Earth and includes geophysics, petrology and mineralogy.

geometry A mathematical system for measuring lengths and areas of two-dimensional figures and the linear dimensions, surface area and volume of solids. Derived from the Greek word meaning to measure the Earth, geometry has been an essential branch of mathematics since ancient Egypt, Sumer and Babylonia, where engineers relied on it to design and build their mammoth temples and palaces. The Greek mathematician Pythagoras began the systemization of plane geometry in the sixth-century B.C., Euclid completed the work a century later, and Archimedes developed solid geometry two centuries after that. But like many other sciences,

geometry advanced little between the Greek era and the beginning of the Age of Enlightenment, when secularists began challenging the power of the church for control of the 17th-century educational establishment. By developing the links between algebra and geometry, the French philosopher and mathematician René Descartes created analytic geometry, which forms the basis of the modern subject.

Taught in secular schools since the first settlers arrived in the New World, geometry today is a standard, required element of the secondary school curriculum. Although touched on in basic elementary and middle school mathematics courses, plane geometry is usually offered as a full-year course in the second year of the required three-year, secondary school mathematics curriculum, sandwiched between a year's study of elementary algebra and a year's study of advanced algebra, trigonometry and analytic and solid geometry.

George Acts A succession of four laws, enacted, respectively, in 1929, 1934, 1936 and 1946, initially to provide federal funds to support home economics and agricultural education, but eventually expanded to provide funds for vocational education in industrial trades and crafts. Named after long-time Georgia Democrat and congressman Walter F. George (1878–1957), who cosponsored the laws, each of the acts was passed to replace the previous, expiring one. The initial George-Reed Act provided \$7.5 million for home economics and agricultural education for a five-year period. When it expired, it was replaced by the George-Ellzey Act, which extended the scope of the funding to trade and industrial education, but only through 1937. The George-Dean Act (1936) expanded the scope of its predecessors, providing \$12 million in annual appropriations indefinitely and broadened coverage to include U.S. territories. The George-Barden Act doubled those appropriations in 1946.

Georgia One of the original 13 states and the fourth to join the Union, in 1788. Georgia planned to build state-supported schools in each county when it drafted its first constitution in 1777, but the legislature refused to provide funds for the system and only a handful of wealthy communities managed to establish common schools. The state was among the first to establish a university, chartering the University of Georgia in 1785. The Civil War destroyed virtually all of Georgia's schools. Although an 1870 law called for development of a state system of public schools, the law left funding of each school to the discretion of local communities. As before, only a handful of wealthy communities established schools, leaving the state bereft of public education until 1877, when a new constitution was adopted. That document established a statewide public school system, but, to prevent blacks from obtaining more than a rudimentary education, it limited the new system to elementary schools and restricted the curriculum to the basic elements of reading, writing, arithmetic, grammar and spelling.

The Georgia constitution specifically prohibited establishment of public secondary schools, and all secondary schools that were established were private and restricted to white children. Moreover, the state enacted legislation granting such schools exclusive monopolies over secondary school education in their localities, thus eliminating the possibility of establishing any secondary schools for blacks. The constitution did not prevent the opening of a number of black colleges, however, and these offered students the equivalent of secondary school as well as higher education.

In 1912, after a study by the University of Georgia delineated the economic need for a state system of secondary schools, the state passed a constitutional amendment extending state support to public secondary schools. The new constitution, however, left control of

schools to local communities, which systematically deprived blacks and most poor white children of adequate education and almost universally defied the 1954 ruling of the U.S. Supreme Court in *BROWN V. BOARD OF EDUCATION OF TOPEKA* to desegregate all public educational institutions. Georgia was slow to comply with the Court ruling and did not act to modernize its public schools until 1985, when the legislature passed the Quality Basic Education Act, which called for a required, statewide basic curriculum, quality education programs for gifted students, improved school performance standards and higher teacher salaries. By 2005, the act had produced minimal effects on the quality of Georgia's public schools, where student academic proficiency ranks 40th among the 50 states. Of the state's 1.5 million schoolchildren, more than 46% are minority students (38% African American), and 18% live in poverty. Georgia has 22 public four-year and 52 public two-year colleges. It has 43 private four-year colleges, 10 of them for-profit institutions, and 9 private two-year colleges, 6 of them for-profit schools. The state's landmark Hope Scholarship program provides free tuition and fees at every public college and partial tuition at private colleges in Georgia for Georgia students who graduate from a state high school with a 3.0 grade point average or better. Funded by the state lottery, the program has spurred high school students to improve their grades and lured ever-increasing numbers of the state's highest academic achievers to the University of Georgia system instead of out-of-state institutions. Graduation rates at the state's colleges, however, are an abysmal 42.2%–38.5% for men and 45% for women.

German Americans American citizens of German birth or ancestry. Although a handful of Germans had arrived among early colonial settlers, they did not migrate to the New World in appreciable numbers until the Thirty Years'

War (1618–48) had turned their native land into a political and religious battlefield. Luckily, William Penn had turned his vast holdings into a haven for any group seeking religious freedom. In the years following 1682, German Protestants—primarily Mennonites, Dunkers, Amish and Schwenkfelders—organized communities in Bucks County, near New Jersey, and Lancaster County, near the Maryland border, where they could preserve their language, customs and religious practices. Later, they were joined by Lutherans and members of the German Reformed Church, along with a startling variety of other German Christian sects: Labadists, Zion's Bruder, Ronsdorfer, Gichtelians, Depellians and others. They expanded their initial settlements across a wide arc of fertile farmlands that their descendants—the Pennsylvania Deutsche (corrupted into Pennsylvania Dutch)—still occupy, from Easton, on the Delaware River, southwest to the Susquehanna and across the Cumberland Valley.

By the mid-18th century, German immigrants were arriving in such large numbers that BENJAMIN FRANKLIN feared, "This will in a few years become a German colony." In a letter to a friend in 1751, he wrote, "Instead of learning our language, we must learn theirs, or live as in a foreign country. Already the English begin to quit particular neighborhoods [of Philadelphia] surrounded by Dutch [corruption of Deutsche], being uneasy by the disagreeableness of dissonant manners . . ." Franklin's fear that the colony would ultimately be Germanized provoked the introduction into Parliament and the provincial assembly of bills to suppress all German printing houses, prevent importation of German books, restrict immigration of German nationals, introduce an English literacy requirement for suffrage and require establishment of English schools.

Although the laws were not enacted, the fear of Germanization prompted the establishment in London of a well-financed philan-

thropic organization, the Society for the Propagation of Christian Knowledge Among the Germans in Pennsylvania, which established English schools to Anglicize German children in the colonies in 1755. During their many years of existence, the schools never managed to educate more than a few hundred German children a year, and their work provoked the majority of Germans to redouble their efforts to preserve their own language and culture—a legacy evident in many rural “Dutch” communities of Pennsylvania to this day. The Germans did, of course, adapt somewhat to their new land, adopting English speech and many cultural characteristics necessary for successful trading in nearby markets and for establishing commercial ties. Many also abandoned pacifism in the face of Indian attacks.

As discontent spread over excessive taxation by the British Parliament, Benjamin Franklin, the consummate diplomat, traveled the country to reconcile differences among various immigrant groups. After he appealed to their fierce love of individual liberty, the majority of Pennsylvania Dutch enthusiastically joined Franklin and those favoring American independence from the British, thus completing reconciliation, if not assimilation, with their English-speaking countrymen. Although they retained separate schools and churches (and do so to this day), they organized Franklin College (now Franklin and Marshall) in Lancaster in 1787, named in honor of their former adversary.

The second major wave of German immigrants—in the 1830s, 1840s and 1850s—did not flock to the earlier settlements. Made up primarily of well-established, middle-class Catholic or Lutheran families, they came to the New World, not to find a secluded haven in which to perpetuate the ways of the Old World, but to assimilate as quickly as possible and share in the wealth of an expanding new nation. A measure of their success is the fact that 12% of all immigrants to the United States

between 1820 and 1992 came from Germany—more than from any other country, including Italy (9%), the United Kingdom (9%) and Ireland (8%). They settled in major cities such as New York and Milwaukee, where they sent their children to English-language public, parochial or secular private schools and helped reinforce what was just developing into the world’s first system of universal public education.

Gesell, Arnold L. (1880–1961) Wisconsin-born physician and psychologist, whose pioneer research in child behavior and development produced widespread adoption of more permissive approaches to training and education of infants and children, both at home and in schoolrooms. In 1911, he was appointed the first director of the Yale Clinic of Child Development, which he headed until his retirement in 1948, when the clinic closed. Interested in the origins and development of individual differences in children, Gesell launched an extensive study of more than 12,000 children by filming their behavior in natural settings.

At the time, educators and psychologists were endlessly debating whether child behavior was the result of environmental or genetic influences. The former believed that training in the home and classroom were the primary determinants of child behavior, while the latter insisted biological change determined most child behavior and that normal, healthy children simply adopted and then abandoned various forms of appropriate behavior according to their level of development. Gesell’s studies provided an enormous body of then incontrovertible evidence to support the maturational theorists. The result of his studies was a series of widely used and respected books that established developmental norms and created new concepts in child training and education. Entitled *The First Five Years of Life* (with others, 1940), *The Child from*

Five to Ten (with Francis Ilg, 1946) and *Youth, The Years from Ten to Sixteen* (with Francis Ilg and Louise Bates Ames, 1956), his books outlined the normal, healthy behavior that parents and teachers can expect every normal, healthy child to exhibit at any given age.

Gesell also developed many tests to measure infant and child development, intelligence and school readiness. Two sets of tests, the Gesell Developmental Schedules, now the Gesell Maturity Scale, measure the motor skills, adaptive abilities, language and personal development and maturation of young children. One set is designed for infants four weeks to five months old, the other for preschoolers aged 1½ to 6. In 1950, three prominent psychologists founded the Gesell Institute of Child Development (now the Gesell Institute of Human Development), naming it in his honor and appointing him consultant. A prolific author in the field of child development, Gesell also wrote a number of books on handicapped and retarded children.

Gesell School Readiness Screening Test A widely used method of determining whether to admit children to kindergarten or allow them to spend another year in preschool. One part of the test is made up of various geometric shapes that the child is asked to copy freehand. A second part of the test is called the Incomplete Man and consists of a small circle for a head and, below it, a larger, incomplete circle representing the trunk, with one stick arm and one stick leg protruding. The head has one ear, some hair, a mouth and a nose, but is missing both eyes, one ear, some hair, an arm and leg and various connecting elements, which the child is expected to provide. Although some children readily complete the test neatly and thoroughly, critics of the test contend that many five-year-olds who may be developmentally ready for kindergarten respond to the stress of test-taking with poor results.

G.I. Bill of Rights The popular name for the Serviceman's Readjustment Act, a law passed in 1944 that marked the beginning of the popularization of higher education and its transformation from a privilege for the wealthy elite to a basic right of all Americans, regardless of economic class. The bill provided all World War II veterans with a complete educational allowance to attend any accredited school, college or university. Included were all costs of tuition, student fees and books, which the government paid directly to the institution, and a monthly stipend paid to the veteran for living expenses along with home-loan guarantees. Benefits extended over a period of time determined by each veteran's length of service.

The irony of the G.I. Bill was that its enactment was not motivated by any desire to popularize higher education. Indeed, the primary purpose was to prevent a repetition of the mass unemployment of demobilized servicemen that had plagued the United States following the end of World War I. The G.I. Bill was expected to create a temporary bulge of college and university enrollments and a gradual return to normal as veterans—usually older men, often with family responsibilities—found jobs and returned to civilian life. To the astonishment of the U.S. government and the higher-education establishment, the veterans—many of them from impoverished backgrounds, but nonetheless far more mature than typical undergraduates—not only completed their higher education, they also performed better academically than anyone had expected. As they emerged with degrees, the expanding U.S. economy absorbed them at such unexpectedly high salary levels that public perception of higher education changed from that of an esoteric pastime for the rich into a means of achieving success for the average American. Indeed, the academic successes of former G.I.s at college inspired President Harry Truman to establish a COMMISSION ON HIGHER EDUCATION,

in 1946, and its report, two years later, confirmed that American colleges and universities would have to open their doors to every citizen and cease reserving their classrooms for an intellectual elite.

In 1952, the G.I. Bill was extended to cover Korean War veterans, but the government changed its procedures. Direct payments to institutions were stopped, but veterans received larger direct payments from which they were to pay their own tuition and educational costs. By 1960, the G.I. Bill had provided educational benefits to more than 10 million veterans, whose education had either been delayed or interrupted by military service. Legislation in 1966 and 1967 extended coverage to Vietnam War veterans, and subsequent legislation provided educational benefits to all service personnel, regardless of whether they had served in any armed conflicts.

Most recently, all G.I. Bill benefits are contingent on the servicemen or -women contributing \$1,200 from their military salaries during their first year of service. Then, after completing their three-year minimum enlistment terms, they become eligible for up to \$36,144 toward education expenses. An additional \$600 contribution adds \$5,400 to those benefits. Although the Department of Veterans Affairs claims that the amount covers 70% of the average costs of attending a four-year public institution, the COLLEGE BOARD estimates that the benefits, which total just over \$9,000 a year, cover only about 60% of college costs, which average \$14,600 for tuition, books, fees and living costs at a four-year residential public college. Although nearly 95% of service personnel sign up for the G.I. Bill and 70% use at least some portion of their benefits, the rest fail to do so and forfeit their initial investments.

gifted A quality of above-average intelligence, aptitude, cognitive ability, creativity, social skills or talent, usually identified either

by direct observation or standardized testing. Specific "gifts" may range from the intellectual to the physical. Intellectually gifted children tend to read earlier, show greater curiosity, speak in more complex sentences and recognize cause-and-effect relationships earlier than most children their age. Once in school, gifted children have longer attention spans and learn faster than their peers.

Generally defined as those who score above 145 on I.Q. (INTELLIGENCE QUOTIENT) tests, gifted children constitute about 3% to 5% of the student population in the United States, although percentages range widely from state to state, from as low as 1% to as high as 15%. Variations, however, may reflect quality of education and environment as well as genetically determined intellectual makeup of the student population. Nearly one in five American children live in poverty, with limited educational opportunities and few opportunities to display any talents. Because schools serving the poorest areas focus on the academic deficiencies and the social and emotional maladjustments and other problems most children bring to school, the talents of the gifted are often unnoticed or ignored.

Even schools in economically healthy areas ignore special education for the gifted, often, according to some educators, because of a historic prejudice against the gifted in a nation that bases its demands for independence on the belief that "all men are created equal." According to some educators, the result has been a cultural bias against gifted students. "In America," according to the minutes of the 1993 annual conference of the National Association for Gifted Children, "we often make fun of our brightest students, giving them . . . derogatory names. As a culture, we seem to value beauty and brawn far more than brains."

Whatever the reasons, neither funding nor public enthusiasm for such programs has ever matched that for programs for the retarded and

handicapped, and one-third of all school districts in the United States continue to deny gifted children special education. Gifted children often master 35% to 50% of the elementary school curriculum before the start of a school year, and therefore require special educational programs geared to satisfy their need to explore the limits of their own potential. But in 1978, three years after Congress had provided funds to educate the handicapped and the retarded, growing public pressure for equal treatment of gifted children forced enactment of the Gifted and Talented Children's Act authorizing federal funds for specialized education for gifted children.

Although fewer than 40 states actually implemented such specialized education, every state government did appoint at least one functionary in the office of the state superintendent or commissioner of education to oversee programs for the gifted. About two-thirds of American public schools initiated programs of special studies for gifted students, but most averaged only about two to three hours a week and left gifted students languishing in classes that require little effort for the rest of the week. Only two cents of every \$100 spent on K-12 education supports special education for gifted students, compared to more than 15 cents for the handicapped and 17 cents for the disadvantaged. Few publishers offer textbooks designed for above-average students.

Some educators contend that gifted children, along with mildly retarded and handicapped children, benefit more by remaining in regular classes with average students. Such educators maintain that, while gifted students may have above-average abilities in some sectors, they need to develop normally in other areas by remaining with their peers. Moreover, such "mainstreaming" allows other students to benefit from the special talents of gifted students, who can serve as intellectual role models for their slower peers. Proponents of special edu-

cation for the gifted mock such arguments for mainstreaming as a self-serving policy aimed at keeping costs of education as low as possible.

Despite the arguments in favor of mainstreaming, a wide variety of special education programs for the gifted have emerged across the United States. Even before World War II, many individual schools routinely allowed students to "test-out" of courses whose materials they already had mastered and move on to higher-level courses. Testing-out has now expanded in many areas, in the wake of so-called compacting, in which materials of traditional one-year courses are literally compacted to permit gifted students to complete the work in relatively short periods of time. Students who have completed all the work available in a particular secondary school course can then take college-level courses (for full credit) at nearby colleges or universities, while continuing secondary school courses at their high school. Some colleges send instructors to conduct advanced courses at high school campuses, while others train high school teachers to conduct such courses. A few colleges pioneered programs that allow gifted high school students to matriculate and begin their college education at an early age. Among the most renowned of these programs are the following:

- Mary Baldwin College, Staunton, Virginia, primarily a women's college, accepts between 60 and 70 13- to 15-year-olds, houses them in their own dorms for the first two years, although they enroll in and attend regular college classes with older students.
- California State University, Los Angeles, accepts about 100 11- to 16-year-olds in its Early Entrance Program. Students live at home but enroll as full-time students and attend the same classes as regular students.
- JOHNS HOPKINS UNIVERSITY, Baltimore, Maryland, admits 11- to 16-year-olds to take a science, mathematics or humanities course as part of a residential summer program sponsored by a network of 17 colleges. The university's Center for Talented Youth offers a distance-learning

program in mathematics and writing during the regular academic year.

- Simon's Rock College of Bard, Great Barrington, Massachusetts, was founded in 1966 as an "EARLY COLLEGE" for gifted students, who can enroll full time after tenth or eleventh grade. Affiliated with Bard College in Annandale-on-Hudson, New York, Simon's Rock awards associate degrees after two years and bachelor's degrees after four years of courses, some of which are taken at Bard. Enrollment fluctuates between 250 and 350.
- University of North Texas, Denton, houses the Texas Academy of Mathematics and Science, where 350 to 400 gifted 16- and 17-year-olds (mostly Texans) complete four years of schoolwork—the last two years of high school and first two years of college—in two years of accelerated studies. Considered college juniors when they complete the academy, the graduates usually go on to larger universities, although they may remain at Denton if they choose.
- University of Washington, Seattle, accepts about a dozen or so gifted 12- to 14-year-olds at its Transition School, where they take classes together but live at home. After one year, they can enroll as regular freshmen at the university.
- Dozens of colleges and universities offer online courses designed for gifted children of various ages in math, English literature, history and the social and physical sciences. Offered at relatively low cost, the courses allow the colleges to identify and recruit exceptional students. Students, in turn, can earn academic credits toward high school graduation and often college credits as well. Among colleges that pioneered such programs are Stanford, Johns Hopkins, Duke, Northwestern and the universities of Missouri, Washington and Iowa.

Some school districts have established separate high schools for gifted students. Often called MAGNET SCHOOLS, they range from all-purpose schools, with a broad curriculum of arts and science courses, to specialized schools that concentrate on mathematics, science or the performing arts. Some states have established

residential schools for the gifted to accommodate students from widely scattered rural areas. North Carolina created the state-supported North Carolina School for the Arts in 1965 to provide special education for gifted students in music, drama and the visual arts. In 1980, the state established a second residency school for the gifted, the two-year North Carolina School of Science and Mathematics.

Some corporations have also established special educational programs for gifted high school students. These include sending skilled personnel into high schools to teach gifted students and bringing such students to their plants and laboratories where they can participate in advanced study and research under the guidance of an assigned mentor.

(See also ACCELERATION; GENIUS; SCHOOL-COLLEGE PARTNERSHIP PROGRAMS; TRANSITION SCHOOL.)

Gilman, Charlotte Perkins (1860–1935)

American author, sociologist and feminist who developed the concept of gender equality as a valid sociological phenomenon. The great-granddaughter of firebrand preacher Lyman Beecher, Gilman was born in Hartford, Connecticut. Poverty permitted only a limited education, although she did manage to spend a term at the newly opened Rhode Island School of Design during a short residence in Providence. She managed to support herself as a commercial artist, teacher and governess; after an unsuccessful marriage, she began championing women's rights with a series of books that called for radical reforms in child-rearing and educational practices as a means of ending GENDER DISCRIMINATION. After studying the works of LESTER FRANK WARD, a long-time champion of women's rights and the "father of sociology," Gilman became one of the outspoken leaders in the fight for woman suffrage and equal educational rights for women. After women won the right to vote in 1919, the feminist movement receded and, with it, Gilman's influence.

But the sociological concepts she developed eventually spawned a revival of the struggle for gender equality after World War II. In 1932, she discovered she had contracted breast cancer. After years of treatment failed to arrest the disease, she committed suicide.

Gilman, Daniel Coit (1831–1908) American educator who, as first president of Johns Hopkins University, introduced the concepts of separate, freestanding GRADUATE SCHOOLS and research-oriented universities. Born in Connecticut, he graduated from Yale University, where he remained for 17 years as professor of physical and political geography and organized plans for the new Yale Scientific School (later the Sheffield Scientific School). In 1875, after a less-than-satisfying three-year term as president of the University of California, he accepted the presidency of a new university being built in Baltimore under the terms of a \$7 million bequest from financier Johns Hopkins.

Gilman envisioned the embryonic university as a center for research by the world's greatest "seekers of truth," and he spent the next year traveling across the United States and Europe in search of the most talented researchers and lecturers. Free from the theological restrictions of older universities and the political pressures he had endured at the state-operated University of California, Gilman built Johns Hopkins as a center of original research and a training ground for graduate students. In 1889, in accordance with Hopkins' original bequest, the Johns Hopkins Hospital opened, with Gilman as director. Four years later, Gilman opened the Johns Hopkins Medical School, with what seemed like impossibly high admission requirements at the time—namely, a four-year college degree. The requirement quickly became standard at all other major American universities.

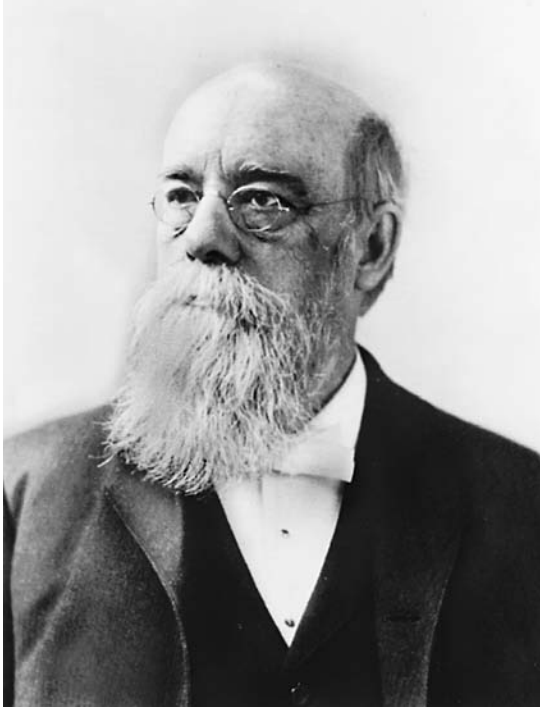
When he retired in 1901, Gilman had created the first model of a great research univer-

sity—a model that was immediately copied by Harvard, Yale and other major universities. Following his retirement, Gilman became the first president of the Carnegie Institution, which steel magnate ANDREW CARNEGIE had founded to fund a variety of educational enterprises. Gilman also served on the General Education Board, a philanthropic organization with similar goals, founded by John D. Rockefeller.

Girl Scouts of the U.S.A. One of many organizations founded at the beginning of the 20th century as educative institutions for the benefit of adolescents when schools were closed. Founded in Savannah, Georgia, in 1912 as an American version of Britain's Girl Guides, the organization changed its name to Girl Scouts the following year and moved its headquarters to New York City. Like comparable organizations for boys, the Girl Scouts prepared handbooks for local adult leaders on how to operate chapters, and it published a monthly periodical, *The American Girl*, for members. The founding philosophy behind organizations like the Girl Scouts was to channel the "gang" and "play" instincts of adolescents into activities that would shape them into responsible adults and "inspire them with the highest ideals of character, conduct, patriotism and service that they may become happy and resourceful citizens." The Girl Scouts also organized summer camps and a variety of programs for younger girls: Brownie Girl Scouts (ages 6–8), Junior Girl Scouts (ages 9–11) and Cadette Girl Scouts (ages 12–14). Total membership is now 3.5 million.

Gladden, Washington (1836–1918) Liberal, evangelical American clergyman who attempted to reconcile biblical teaching with "modernism," namely, the theory of evolution and other scientific concepts that undermined the veracity of biblical tales.

Gladden set himself at odds with fundamentalist preachers who believed in biblical



Washington Gladden (*Library of Congress*)

infallibility and called the theory of evolution and other scientific discoveries sacrilege. Gladden agreed that the Bible was an inspired book containing supernatural elements but believed that it was not a work of science, and indeed did not contradict modern science, which he considered as much a product of Christianity and divine inspiration as the Bible itself.

Born in Pennsylvania, Gladden was largely self-educated, although he eventually graduated from Williams College. After ordination, Gladden spent 22 years (1860 to 1882) as minister of a series of Congregational churches in New York and New England, where he tried to influence capital and labor to abandon strikes and industrial violence in favor of compulsory arbitration. In 1882, he became minister of the First Congregational Church of

Columbus, Ohio, where he remained the rest of his life. By then, he had written a number of widely read books and developed a large and influential following in the northeast, where his socially liberal Christian views proved decisive in fending off efforts by FUNDAMENTALIST Christians to control education by imposing Bible studies in public schools and banning teaching of scientific theories that contradicted scriptural texts.

glee club A choral group popular as an extracurricular activity at colleges and some secondary schools. Although some glee clubs occasionally include sacred music in their repertoires, glee clubs have always been associated with popular song. The glee is a peculiarly English form of song that reached its peak of popularity in the 75 years between the middle of the 18th century and the end of the first quarter of the 19th, after the Age of Enlightenment had stripped away some of the church's control over everyday behavior. Many Englishmen, both at home and in the colonies, began spending leisure time engaging in amusing activities, such as singing, instead of prayer.

The glee differed from previous types of songs, such as madrigals, in that it was simpler, shorter and far easier for amateur voices to sing in unison or in improvised harmony. Despite its association with joy and entertainment, the glee may be serious and even mournful as well as cheerful. Its distinguishing feature is its tonal simplicity, a quality not found in the complex, fugue-like qualities of madrigals and other songs requiring trained (church) choirs. The earliest known and, in his own life, premier composer of glees was Samuel Webbe (1740–1816), who in 1783 organized the world's first men's group devoted to singing glees. Made up of 13 amateur and eight professional male voices, it met at members' homes until 1787, when it obtained a formal charter as a society called, not surprisingly, the Glee Club. It held its first public

meeting at the Newcastle Coffee House on Saturday, December 22, 1787, moving thereafter from tavern to tavern and opening every performance with the singing of Webbe's famous "Glorious Apollo." Although the world's original Glee Club dissolved in 1857, its traditions, including the singing of "Glorious Apollo" as a performance opener, spread to the United States. By the end of the century, after churchmen had relinquished control of student life, the glee club became a standard form of extracurricular activity on many American college campuses. Admission of women to formerly all-male colleges in the late 1960s and early 1970s forced many college glee clubs to become coeducational.

Glorious Revolution The bloodless revolution (actually, a series of covenants) of 1688 that replaced the Catholic James II as English king with the Protestant William of Orange and his wife, Mary, James's daughter. Parliament gave William and Mary the Crown jointly. In return, William and Mary issued a Declaration of Rights listing Parliament's grievances against James and affirming the "ancient rights and liberties" of Parliament and the implicit limitations of royal powers. In addition, the Glorious Revolution, which was "glorious" because it was bloodless, produced the Toleration Act of 1689, which gave Protestant dissenters the right to worship. The effect on education in America was instant, as swarms of ministers of every variety of sect migrated to the colonies to establish churches, where they served as secular, as well as spiritual, teachers to their communities. Their diverse efforts proved the foundation of public opposition to standardized, universal education in the colonies and, later, in the United States.

goal-free evaluation The examination and assessment of the positive and negative "side effects," or unintended results, of an educational program. Goal-free evaluation specifi-

cally ignores the stated and projected goals of an educational program to determine whether the unanticipated effects are productive or counterproductive.

Goals 2000 A program of voluntary national education standards provoked by the startling 1983 report *A Nation at Risk*. Compiled by the National Commission on Excellence in Education, the report detailed widespread educational failures of American public schools and frightening gaps in educational achievement between American children and their counterparts elsewhere in the industrialized world. The standards were codified in the "Goals 2000: Educate America Act," a 1994 law that established national academic standards for students completing the fourth, eighth and eleventh grades in math, science, history, geography, foreign languages and the arts (dance, music and the visual arts).

Goals 2000 began as a governmental policy enunciated in 1990 by President George H. W. Bush, who won approval of the 50 state governors for eight national goals to raise the standards of American public schools and make American students "first in the world" in mathematics and science by the year 2000. After he assumed office in 1993, President Bill Clinton adopted and expanded Bush's policy into the Goals 2000 legislation, called the Educate America Act, which carried no enforcement provisions but did set these goals for American public schools—all of them to be reached by the year 2000:

- All children will start school ready to learn.
- The high school graduation rate will be 90%, compared to less than 75% at the time Goals 2000 was created. Although the graduation rate for white non-Hispanic students was already above 90%, the rate for Hispanic students was only 75%, while the rate for students with disabilities averaged less than 45% and ranged as

low as 30% and only as high as 65%, depending on the disability.

- All students will leave grades 4, 8 and 12 showing competence in core subjects, namely, English, history, geography, foreign languages and the arts.
- Teacher training is to be significantly improved, with all teachers having access to professional development to help them prepare students for the next century. At the time, government studies found that more than one-half of all public school math, science and English teachers were unqualified to teach those subjects, and 20% of American teachers admitted they had been assigned to teach subjects they were not qualified to teach. Fewer than one-third of public high school physics courses were being taught by qualified teachers.
- The United States will be first in the world in math and science.
- All adults will be literate.
- Schools will be free of drugs, violence and weapons.
- Every school will promote partnerships to increase parental involvement.

Goals 2000 also provided more than \$2 billion in annual, federal grants to spur “systematic” state education reforms. Although the standards were voluntary, states and school districts that failed to adopt them found it increasingly difficult to attract new industry and foster job growth without evidence that their educational systems were competitive with the finest American and foreign school systems. Moreover, those who ignored the standards also forfeited millions of dollars in badly needed federal funds for education.

The first set of standards incorporated into the Goals 2000 program had been established in 1989 by the National Council of Teachers of Mathematics, which had responded on its own to *A Nation at Risk*. Within five years, these standards had been adopted by 40% of American public schools. In 1994 standards for all aspects of art education—dance, music, drama and the

visual arts—were established by representatives of the U.S. Department of Education, the National Endowment for the Arts, the National Endowment for the Humanities and the Music Educators National Conference. Standards for history and English were developed in 1996, but the English standards were later revised after critics attacked them for being too vague.

Although Goals 2000 failed to achieve any of its broad goals entirely by the year 2000, the program did spur major advances in American public education. Thirty-five states had indeed increased their high school graduation rates to 90% or better, and 48 states and the District of Columbia had introduced standardized tests in every subject area to determine whether students had achieved competency in each subject and were worthy of promotion or graduation. Students in about one-third of the states scored at or above national proficiency levels in core subjects.

American schools made giant strides in other directions as well, for the Goals 2000 program provoked Congress into passing a number of supplemental education improvement acts, including the IMPROVING AMERICA'S SCHOOLS ACT and the SCHOOL-TO-WORK OPPORTUNITIES ACT. The former provided massive funds to improve vocational education, and the latter provided equally massive funding for educating disadvantaged children.

Goodlad, John I. (1921–) Educator/founder and longtime director of the CENTER FOR EDUCATIONAL RENEWAL, a major force for educational reform in the United States during the last two decades of the 20th century. Based at the University of Washington's College of Education in Seattle, the center was founded in 1985 to implement Goodlad's premise that reform of U.S. public schools hinged on reform of teacher education.

“We have treated teacher education shabbily for 150 years,” said the Canadian-born

Goodlad, who earned his Ph.D. at the University of Chicago, where his mentors and colleagues included such pioneers in education as BENJAMIN BLOOM and MORTIMER ADLER. The author of the monumental and highly acclaimed study of American schools *A Place Called School* (1984), Goodlad contended that American society viewed teachers “more as baby-sitters than as pedagogical experts.” The study, which took eight years and was based on more than 27,000 interviews, was considered the most comprehensive examination of American public schools ever made.

Assisted by 43 researchers, Goodlad found a “gap between the rhetoric of individual flexibility and creativity” in American educational goals and “the cultivation of these in our schools. . . .” He determined that American schools and classrooms actually “condition them [students] in precisely opposite behaviors—seeking ‘right’ answers, conforming, and reproducing the known. . . .” Goodlad proposed several reforms, including smaller schools, with no more than 300 students and a dozen teachers. Where small schools were impractical, he called for division of large schools into “houses” of 100 elementary pupils or 160 high school students. He called for children’s primary education to begin one month after their fourth birthday and for secondary education to end at 16—an age range he described as a “very stable period.”

He condemned ability grouping and the “prevailing wisdom that mixed classes sink to the lowest common denominator. What we found was the mixed classes were more like the high track than the low track in terms of content, teaching practices, student enthusiasm and teacher expectations.” He urged high schools to require all students, even those in vocational education, to take a core curriculum in the humanities and sciences, and he recommended that schools adopt TEAM TEACHING as a standard approach to education.

Goodlad’s study was published just as the U.S. Department of Education was releasing a shocking study entitled *A Nation At Risk*, in which the NATIONAL COMMISSION ON EXCELLENCE IN EDUCATION had concluded, “If an unfriendly foreign power had attempted to impose on America the mediocre educational performance that exists today, we might well have viewed it as an act of war.” Goodlad’s study went beyond a mere confirmation of the commission’s findings. It proposed a program of remediation that, along with proposals from a study entitled *HIGH SCHOOL: A REPORT ON SECONDARY EDUCATION IN AMERICA*, by the CARNEGIE FOUNDATION FOR THE ADVANCEMENT OF TEACHING, became the core of a nationwide educational reform movement that continues to this day.

A teacher at every grade level from first grade through advanced graduate work, Goodlad served as professor of education and dean of the Graduate School of Education, University of California, Los Angeles, before founding the Center for Educational Renewal in 1985. Author of 20 books and more than 200 articles in journals and encyclopedias, Goodlad proposed reforming teacher education in much the way medical school education was reformed early in the 20th century, by moving it from the university campus into teaching hospitals that meshed theory and practice. Outlined in his book *Teachers for Our Nation’s Schools* (1990), Goodlad proposed establishing “centers of pedagogy” for teacher education. Such centers would use carefully selected practice schools, operated jointly by the school of education and the school district, to train future teachers, to develop teaching innovations and to study learning processes. Goodlad laid out 19 postulates as essential for first-rate programs. After completing a prescribed preeducation curriculum, comparable to premedical education, prospective teachers would enter a three-year teacher-education program, culmi-

nating with a year of semester-long internships in two practice schools.

Within five years of its founding, Goodlad's Center for Educational Renewal had grown into a major force for education reform in the United States, having received applications from 260 teacher-training institutions—about one-fifth of all those that prepare teachers—to become pilot “centers of pedagogy” along the lines he prescribed. Almost every state was considering Goodlad-suggested reforms in state university-based teacher training programs, most of which had remained relatively unchanged since the 19th century.

(See also EDUCATION REFORM.)

Goodrich, Samuel Griswold (1793–1860)

One of the first major American publishers and a pioneer in the development of children's textbooks. Born in Connecticut and equipped with only an elementary school education, Goodrich started his publishing venture in 1816, after serving in the Connecticut militia in the War of 1812. His early publications were such staples as the *Family Bible* and classics by popular authors. In 1827, remembering the difficulties he had experienced struggling through uninteresting elementary school textbooks, he began to write a series of readers, textbooks and anthologies for children, presenting them in the form of simplified tales recounted by a fictional old storyteller named Peter Parley. Starting with *The Tales of Peter Parley About America*, he eventually published more than 100 Peter Parley books on history, geography, science, biography and morals, all written in easy-to-understand language for children. By 1856, he had sold more than 7 million copies of the highly popular books. Although he wrote some himself, he hired authors—including Nathaniel Hawthorne, once—to write most of the books. He also edited and published two periodicals for children, *Parley's Magazine* (1832–34) and *Merry's Museum* (1841–54).

Google Print Library Project An on-line library providing access to all the information in millions of books in digital form. The library is an ongoing, long-term project of the huge search engine Google, in partnership with Harvard University, Stanford University, the University of Michigan at Ann Arbor, Oxford University of England and the New York Public Library. The project is scanning more than 30 million books from the five libraries and then millions more books at other libraries. Although it plans to scan books still under copyright, it will limit access to such materials, revealing only specific information in limited amounts before referring searchers to publishers, booksellers and libraries that can provide the complete book. Thus, searchers seeking information on a particular person, for example, would be able to call up references in a myriad of books and download the entire contents of books in the public domain but could only access specific references from books under copyright. Harvard and the New York Public Library have limited the books they contribute to items in the public domain—about 100,000 between the two of them—but Stanford is allowing Google to scan all 7.6 million of its books, and the University of Michigan is letting Google scan all 7.8 million books in its collection. Oxford is limiting its contributions to books published before 1900.

As part of its project to become the world's all-encompassing source of data, Google has also invested \$3 million in the WORLD DIGITAL LIBRARY, an on-line repository of cultural artifacts from the world's national and international archives. First proposed by James H. Billington, the librarian of the Library of Congress, the project has the support of the United Nations Educational, Scientific and Cultural Organization. Far from alone in its efforts to digitize books, Google faces competition from the search engine Yahoo, which has teamed up with the University of California system, the

University of Toronto, Adobe, the European Archive, the National Archives of England and several commercial partners in the Open Content Alliance, to scan at least as many books as Google but limit its offerings to materials that are out of copyright and in the public domain.

Goss v. Board of Education A 1963 U.S. Supreme Court decision that struck down a Tennessee law intended to obstruct the progress of DESEGREGATION. Although desegregation had made substantial progress in most border states in the eight years following the Court's original desegregation orders in 1954 and 1955, the South continued to resist desegregation. Mississippi, Alabama and South Carolina had not desegregated any of their schools, while Texas, Georgia, Virginia, North Carolina, Arkansas, Florida and Tennessee had instituted only "token" desegregation at a handful of highly visible schools in major cities where "massive resistance" to desegregation might have hurt commercial relations with the rest of the United States and many foreign countries.

To block full-scale desegregation, however, the city of Knoxville, Tennessee, instituted a "minority to majority" transfer scheme that allowed students to transfer from schools where their race was a minority into schools where their race was a majority. In effect, the law encouraged students of both races never to enroll in schools where they might be a minority. White parents thus kept their children from enrolling in formerly all-black schools, while black parents, fearful that their children might suffer harassment in white schools, kept most of their children in all-black schools. The Supreme Court decision to strike down the plan was one of three that effectively ended all legal subterfuges by states and school districts seeking to resist desegregation. The other two decisions, *Griffin v. County School Board* and *Bradley v. Richmond School Board*, followed in 1964 and 1965, respectively.

(See also AFRICAN AMERICANS; *BROWN V. BOARD OF EDUCATION OF TOPEKA*; CIVIL RIGHTS ACT OF 1964; DISCRIMINATION.)

Goss v. Lopez A 1975 U.S. Supreme Court decision reaffirming a lower court affirmation of a public school student's constitutional right, under the FOURTEENTH AMENDMENT, to due process in school disciplinary actions. The case involved nine Columbus, Ohio, students suspended in 1971 during demonstrations arising from racial disorders. State law permitted the school to suspend students summarily for up to 10 days without any discussion with them.

The lower court had held that suspended public school pupils had the right to notice of charges against them and an opportunity to defend themselves against such charges. Writing for the majority in the Supreme Court's 5-4 decision, Justice Byron R. White stated that "Young people do not shed their rights at the schoolhouse door." The Court added that pupils had an "entitlement" to education in states that guaranteed their residents free primary and secondary education and that states "may not withdraw that right on grounds of misconduct, absent fundamentally fair procedures to determine whether the misconduct has occurred." It held that suspension without a hearing deprived the students of their property (the statutory right to an education) and liberty (slurring their school records without proof). However, in ruling that the students were entitled to "rudimentary precautions against unfair findings of misconduct and arbitrary exclusions from schools," the Court stopped short of giving students, who had been suspended for short periods, the right to counsel and formal hearings.

government role in education The degree of legal authority that elected government officials or their appointees exert, directly or indirectly, over public and private education.

Unlike most foreign nations, where central governments or official religious authorities control education, the powers of government over education in the United States have been limited since the nation's beginnings. Indeed, the federal government abdicated all influence over education when the republic was formed following independence from England. Prior to that, the colonies had left all education to parents and local churches. The only interference by the state, whose monarch also headed the Church of England, was to certify the teaching qualifications of clerics and ensure their loyalty to the Crown.

At the time of independence, a handful of secular secondary schools had emerged in Philadelphia, New York and Boston, and some socially liberal framers of the Constitution—notably BENJAMIN FRANKLIN, THOMAS JEFFERSON, JAMES MADISON and BENJAMIN RUSH—had sought to include universal public education in the CONSTITUTION as a basic right of all Americans. Indeed, they proposed a national, federally controlled system of public education, with elementary schools in each community, regional secondary schools in each county, a college in each state and a national university. Competitive examinations were to have determined progression to each level, and graduation from the national university was to have been a prerequisite for government service.

The proposal was defeated by northern industrialists and southern planters who feared schools would deprive them of their cheapest form of labor—children and slaves. The Constitution made no mention of education and thus left the question to the states. The latter, in turn, largely left education to parents, who perpetuated the colonial system of either educating children themselves or, if they could afford to, sending them to local, church-run “common schools.” The landed gentry sent their children to independent private schools, also

usually under the direction of churchmen. The only active state control over education was through the issuance of charters of incorporation, which determined a school's right to operate.

In 1837, Massachusetts was the first state to intervene directly in local education. It established what, in effect, was a state board of education, which encouraged local communities to establish locally controlled public schools. State intervention came in two forms: The state government issued voluntary guidelines for teaching methods and curricula, and it established the first teacher-training school in the United States. By providing uniformly trained teachers from a state-run teachers college to man local schools, the state thus exerted indirect control over what was taught in public schools and how it was taught. In the decades before and after the Civil War, other states established variations on the Massachusetts model, with state governments exerting more or less control over local schools, either directly through legislative action or indirectly by controlling the flow of state funds.

Direct state intervention began in 1852 with passage of the first COMPULSORY EDUCATION law—again, in Massachusetts. By 1918, all states had passed similar laws, although they were not all enforced until 1930, when the economic depression created a labor surplus and state governments had to enforce the laws against child labor to provide job opportunities for unemployed adults. With these laws, additional state intervention in education emerged, as legislatures were forced to supplement funds raised from local property taxes to pay for the education of the poor. Property taxes, paid by property owners, usually covered the costs only of educating their own children. Compulsory education forced poor children of non-property-owners into the schools, and state governments had to cover the costs of their education.

Where state governments provided such funds, they used the power of the purse to impose a wide range of standards, ranging from autocratic imposition of textbooks and even teacher lesson plans to the establishment of statewide educational standards. New York, for example, adopted state-administered competency-based examinations to determine whether students would be permitted to proceed to the next grade. Although such statewide standards remain nettlesome for many local school officials and parents, control of elementary and secondary public school education in most areas of the United States remained firmly in the hands of the citizenry until the last decades of the 20th century. Exercising all the rights of a citizen democracy, separate from the ones governing community, state and nation, local voters held separate elections for SCHOOL BOARDS, in which they vested control over local education, including the power to determine the curriculum, hire and fire faculty and school administrators, and admit or dismiss students.

These near-autocratic powers began to recede in the 1950s and 1960s, when the U.S. Supreme Court declared as unconstitutional all discrimination in education on the basis of race, religion, ethnic or national origins and gender. Local school boards were thus stripped of the right to determine who could attend local schools and the right to hire or fire on any basis other than teaching qualifications. While eroding local school board powers, the Court's various anti-discrimination rulings strengthened and indeed added vast new state and federal powers over schooling. To reinforce the Supreme Court's decisions, the federal government passed a series of civil rights and education-entitlement laws. These laws forced public schools to accept learning disabled, mildly retarded and physically or emotionally disabled children and provide them with the same education as other students—and also what-

ever special education such children might need. In effect, such laws imposed open-enrollment policies on all public elementary and secondary schools. Many states reinforced the federal policies by passing laws that extended open enrollment to the public college and university level.

Prior to passage of such civil rights and educational entitlement laws, the federal government had largely limited its involvement in education. Its first, tentative intervention came, with the passage of the first Morrill Land Grant College Act (see LAND-GRANT COLLEGE), in 1862, granting federal lands to the states to establish state-run colleges. A second Morrill Act in 1890 pledged federal funds on an annual basis to help support those colleges. Both acts left state governments with direct control over public higher education but gave the federal government some indirect control through its power to limit or expand the funds it granted to the state colleges.

The federal government began expanding its use of the "power of the purse" to influence education during World War II, when it financed enormous research projects at many public and private universities. These projects continued and, indeed, expanded during the succeeding 40-year cold war with the Soviet Union. Washington further expanded its role in higher education with passage of the G.I. BILL OF RIGHTS, under which the government provided all World War II veterans with comprehensive educational allowances to attend accredited schools, colleges and universities. The G.I. Bill was the forerunner of a complex series of programs under which Washington subsequently financed upwards of half the university students in the United States with a combination of outright grants, loans and job subsidies.

Over and above the fiscal sway the federal government held over higher education, the same anti-discrimination laws that applied to

lower levels of education also applied to higher education. Thus, colleges and universities were forbidden to discriminate in their student admissions and faculty and staff hiring and firing policies, and they were forced to make their campuses barrier-free to accommodate the handicapped.

In the 1980s and 1990s, the federal government extended its influence on public elementary and secondary education by gradually establishing “voluntary” standards of achievement for students. Provoked by the startling 1983 report, *A NATION AT RISK*, which detailed widespread educational failures of American public schools, the federal government established goals 2000 to raise the standards of American public schools and make American students “first in the world” in mathematics and science by the year 2000. The program set standards of achievement in eight academic areas and provided \$1.2 million for the National Assessment of Educational Progress to test students in the fourth, eighth and eleventh grades to see how many reached those standards. The initial legislation also provided hundreds of millions of federal dollars in annual grants to spur “systematic” state education reforms. Although the standards were voluntary, those states that ignored the standards would forfeit millions of dollars in badly needed federal funds for education. Proponents of local control over education opposed what they deemed unconstitutional federal government interference with public school education. Those opponents had little success in blocking the Goals 2000 program, which, in fact, presaged the most massive, direct federal intervention in public school education in American history.

In 2001, Congress imposed the most far-reaching federal controls on American public school education with the NO CHILD LEFT BEHIND ACT OF 2001 (NCLB). An amendment to the ELEMENTARY AND SECONDARY EDUCATION ACT,

NCLB imposed, as a prerequisite for federal aid to public school districts, testing requirements that force every school to demonstrate year-to-year improvements in academic performance—especially schools catering to disadvantaged children. With student academic proficiency at abysmally low levels in parts of the nation, many educators had long called for establishing minimum national academic standards. The Tenth Amendment of the Constitution, however, leaves to the states all powers not expressly conveyed to the federal government by the first nine amendments, and the Founding Fathers purposely omitted education from those amendments to keep education under state purview. Because federal grants provide 10% of their education budgets, however, most school districts have little choice but to accept the conditions that come attached to those grants. A few districts refused in Connecticut, Illinois, Vermont and Virginia, among other states, where they preferred to do without federal aid rather than change their systems of education. Some states even challenged the law on grounds that the federal government failed to cover costs of administering the law and forced states and local school districts to spend local tax dollars to enforce a federal law. A federal court rejected the challenge, saying the states and local districts had the option of withdrawing from NCLB and, of course, forfeiting federal aid as well as federal interference in local education.

(See also Appendix: Federal Programs for Education and Related Activities, listing major federal education legislation, 1787–1993.)

grade A somewhat confusing term in American education, variously used to refer to a general level of education (as in grade school); a specific GRADE LEVEL of education in primary or secondary school (as in first grade or second grade); or an individual or cumulative score, based on a student’s academic performance, as

in a grade of A, B or C (letter grades), 75% or 85% (percentage grades) or pass/fail.

graded school A primary or secondary educational institution whose students are grouped in classes according to chronological age and progress from grade to grade after mastering the materials of each grade. Prior to 1848, students of all ages were grouped in one-room schoolhouses, with a single teacher attempting to provide appropriate work for each student, according to his (almost all students were boys) abilities and level of achievement. The result in most one-room schoolhouses was bedlam, tempered only by the threat of whippings.

After student disorders had closed a number of Massachusetts schools in 1848, the Quincy Grammar School became the first to group its students on the basis of age, assigning one teacher to each grade. Five years later, Oswego, New York, school superintendent Edward A. Sheldon refined the concept by organizing students in separate primary, junior and senior schools.

Accepted as a standard form of school organization for more than a century, the concept of graded schools became the subject of some debate among educators during the mid-20th century. Traditionalists argued that graded schools permitted teacher specialization, thus allowing teachers to acquire and impart a greater depth of knowledge to grades they taught. Curriculum compartmentalization, traditionalists argued, provided a logical sequence through which students progressed as they moved from grade to grade. Critics, on the other hand, called graded schools inflexible and educationally and socially harmful to many students—especially students at extreme ends of the intellectual spectrum. Slower students were often unable to keep up with the pace of learning and were subjected to the humiliation of failure and the necessity of repeating the same grade with younger stu-

dents. Gifted students, on the other hand, grasped materials so quickly that they were easily bored by repetitive drills that average students needed to retain the standard body of knowledge. The debate was eventually resolved by some schools by adding varying degrees of flexibility to their programs, providing remedial education for slower students in elementary schools, and by permitting gifted students to accelerate at their own pace.

At the secondary school level, the majority of schools introduced controversial TRACKING schemes that divided students within each grade according to their academic ability, with slower students placed in a less demanding “general education” track and higher achievers in a more demanding “academic,” or “honors,” track. Tracking, too, came under fire for depriving many students of equal educational opportunity. Some secondary schools subsequently introduced “COOPERATIVE LEARNING” programs that grouped students of varying abilities into small learning teams, with students responsible not only for their own learning and progressing at their own pace, but also for helping each other and encouraging each other to achieve.

grade-equivalent scales A somewhat controversial measurement system that converts raw test scores into a numerical school-grade achievement level. Thus, if the average score of students beginning the sixth grade on a test of 100 questions is 70, any score of 70 would be recorded as 6.0. Any student scoring 70, whether in the fourth, sixth, tenth or any other grade, would still receive a grade-equivalent score of 6.0.

Similar in concept to AGE-EQUIVALENT SCALES, grade-equivalent scales can easily be misused or misinterpreted. For example, gifted students might score below appropriate grade levels on a test if, for whatever reason, they have not had access to the information required for that test. Similarly, slower students with a specific fund

of information might obtain inappropriately high scores on a test but not be able to function at that grade level on a sustainable basis.

grade inflation The elevation of grades and raw scores to levels not commensurate with actual academic achievement. Documented in a number of studies comparing student scores in school with their scores on standardized achievement tests, grade inflation is commonly used to prevent low grades from affecting the academic futures or career opportunities of students.

Grade inflation can be overt or covert. Covert grade inflation involves reducing the academic demands of a course or the difficulty of a test to levels that permit students to obtain higher raw scores. Covert inflation occurs when teacher bias produces higher scores for preferred students or classes and lower scores for students and classes in disfavor. Overt grade inflation simply involves the consistent elevation of raw scores to artificially praiseworthy levels, either by "GRADING ON THE CURVE" or eliminating all mediocre or failing grades and arbitrarily assigning the lowest passing grade to what might have been failing grades.

Grade inflation may occur on individual, classwide or schoolwide levels. One study found that grade inflation is more prevalent in small classes, where personal contact and knowledge of each student is the greatest. Grade inflation is also more evident in humanities courses, where grading is more subjective, than in science and mathematics courses. Many instructors reduce the possibility of subjective grading in the humanities by listing in advance specific points they expect students to mention and the specific degree to which they want each point covered (along with subtopics that must be mentioned and/or discussed) and grade points to be awarded for each.

At the college level, widespread grade inflation began in the 1960s during the Vietnam War, when sympathetic professors raised grades

to prevent mediocre or poor students from flunking out of school and losing their student deferments from the draft. Stanford actually eliminated the F in the 1970s and refused to flunk any student it had admitted, and the percentage of students receiving As and Bs rose to 92%. By the end of the Vietnam War, grade inflation became an ingrained practice, as students, facing rejection by graduate schools or loss of job opportunities, pressured teachers into assigning artificially high grades, often threatening to give teachers poor student evaluations or even threatening lawsuits charging teachers with damages for depriving the students of career opportunities. One study by Dr. Arthur Levine, president of Teacher's College Columbia University, found that the percentage of A grades at four-year colleges had climbed from 7% of all grades in 1969 to 26% by the end of 1994. A U.S. Department of Education survey of 21,000 transcripts from 3,000 colleges found that As and Bs constituted 56% of all grades between 1982 and 1992. A report by the dean of Princeton University showed that 83% of the grades awarded between 1992 and 1997 fell between A+ and B-, compared with 69% between 1973 and 1977. C+s fell from 5.8% to 3.7% and Cs dropped from 6.1% to 3.6%. At Harvard, the mean grade was above B+, compared to B- at the start of the Vietnam War. Some 90% graduated with honors in some courses. At Rutgers, New Jersey's state university, 13% of students earned As in 1950, 29% earned Bs, 34% Cs, 12% Ds and 6% Fs. In 1971, about one-quarter of Rutgers grades were As and about one-third were Bs. By the end of the 1991 academic year, As and Bs made up two-thirds of all grades awarded.

Another source of grade inflation at the college level was the introduction of courses atypical to the traditional, conventional liberal arts and science curriculum. Thus, Stanford offered a course on windsurfing in the early 1990s, while New York University offered an

introductory course in “circus techniques, for which no previous experience is required. The fundamentals of various circus skills, including juggling, trapeze and tightrope, are explained, demonstrated, taught, practiced and coached.”

Defenders of grade inflation insisted that the higher grades represented tighter admission standards that had produced higher levels of scholarship. However, in courses with the greatest grade inflation, surveys of 3,000 IVY LEAGUE students found startling gaps in student knowledge of history and current events. Forty-four percent of students surveyed could not name the Speaker of the House, 59% could not name four U.S. Supreme Court justices and 35% did not know the name of the British prime minister.

Critics of grade inflation contend it is a disincentive for academic effort. Surveys of student course selections indicate that many students purposely avoid empirically graded courses in science and mathematics in favor of courses where grade inflation can enhance their chances of admission to graduate school or of obtaining a better-paying job after graduation. In 1993, Williams College “found the low grades in the sciences were actually discouraging enrollments in those disciplines, and the high grades [in the humanities] were attracting students.” Studies at Duke and Harvard Universities, the University of Wisconsin, and at Amherst and Pomona colleges confirmed the findings. Harvard found that grades were so inflated that “appropriate distinctions among levels of [student] performance can no longer be made,” and in 1993 the dean of undergraduate education urged Harvard’s 400 faculty members to reinstitute the C “as a viable letter grade.” Citing its right to control grade policies as essential to academic freedom, the faculty refused. Stanford faculty, on the other hand, agreed to restore the failing grade in the 1995–96 academic year, although students who failed were listed simply as having “not passed.” In 2004, a survey by Princeton University found

that As made up between 44% and 55% of undergraduate grades at 11 academically prestigious universities—the eight IVY LEAGUE colleges, Stanford, Massachusetts Institute of Technology and the University of Chicago. As a result, Princeton promulgated a program to reduce grade inflation, and by the end of academic 2004–05, only about 45.5% of undergraduates received As, compared with 56.2% the previous year. In engineering, the figure dropped from 48% to 43.2%.

grade level One of the numbered classes, ranging from first grade to twelfth grade, in American elementary and secondary schools. Sometimes called by the English term “form,” the grade level is determined by a combination of age and academic accomplishment. Many schools allow students who lack academic qualifications to progress from one grade to the next on the basis of age alone—a so-called SOCIAL PROMOTION. Traditionally, grade levels are numbered one through six in most ELEMENTARY SCHOOLS, seven and eight in MIDDLE SCHOOLS and nine through twelve in HIGH SCHOOLS. Many high schools also use the terms freshman, sophomore, junior and senior, respectively, to designate ninth, tenth, eleventh and twelfth grades.

Used as grade-level designations at all four-year colleges, the terms freshman, sophomore, junior and senior have varying origins, freshman being the most obvious—literally, a fresh man, or first-year novice student and newcomer. Sophomore may be derived from the Greek *sophos*, “wise,” and *moros*, “foolish” or “moronic.” Thus, the sophomore, or second-year student, is viewed as a wise fool, with more knowledge than a freshman, but nonetheless relatively uninformed, immature and foolishly overconfident. *The Shorter Oxford Dictionary* claims the term was first used around 1795 at the University of Cambridge. The term junior, used to designate a third-year college

student, originates from the juniorate, or first of a two-year course in the Society of Jesus, or JESUITS, leading to the priesthood, with those in the final year called seniors because of their superior knowledge and, usually, age.

grade point The numerical equivalent of a letter grade and a particular level of academic achievement as indicated below:

A	=	4.0	(Excellent)
A-	=	3.7	
AB	=	3.5	
B+	=	3.3	
B	=	3.0	(Very Good)
B-	=	2.7	
BC	=	2.5	
C+	=	2.3	
C	=	2.0	(Satisfactory)
C-	=	1.7	
CD	=	1.5	
D+	=	1.3	
D	=	1.0	(Barely Passing)
F	=	0	(Failure)
U			(Unauthorized Incomplete)
I			(Incomplete)

The total number of grade points accumulated by a student during a semester or school year is divided by the number of credit hours for each course to arrive at the student's grade-point average (GPA) for that period. The cumulative GPA represents a student's grade-point average for all the work completed during the student's entire career at a particular institution. GPAs and cumulative GPAs determine student dismissal, promotion, academic probation and eligibility for graduation, honors and admission to higher-level educational institutions.

grading on the curve A controversial system of inflating or deflating student scores on a particular examination to match the normal

distribution of student grades as represented by a bell-shaped "curve" on a graph. Thus, the majority of student grades normally fall in the C+ to C- range, with decreasing numbers of students obtaining grades ranging as high as A+ and as low as F. But if, on a particular test, the majority of student grades fell in a range from C- to D-, a teacher might inflate class grades to match the normal distribution curve, raising each D to a C, each D- to a C-, on the assumption, perhaps, that the test was too difficult and inappropriate for the level of knowledge of the particular group. Conversely, a teacher might use the normal distribution curve to deflate grades if the majority of student grades fell in the A- to B range, by lowering them to C+ and C- and lowering all other grades to their appropriate level on the normal distribution curve. Critics of the practice of grading on the curve contend it permits teacher subjectivity to alter objective measurements of student achievement.

(See also GRADE INFLATION.)

graduate assistant A university graduate school student hired and paid for teaching, administration or research. Unlike students with FELLOWSHIPS, whose work obligations are secondary to their studies, graduate assistants incur all the obligations of regular employees, and most are unable to handle more than a part-time graduate school program. Moreover, their work assignments may or may not have any relationship to their studies or research. Their work assignments are usually chosen arbitrarily by the university and the professor to whom they are assigned. Graduate assistants are assigned to teach either lower-level college courses or work in tandem with full-time faculty members, correcting student papers and examinations or offering guidance in laboratories. Most work under annual contracts and face automatic dismissal if they withdraw from graduate school. Salaries vary according to the

particular institution and job responsibilities, but usually average about 50% of the average starting salary for public school teachers and serve merely as a way for graduate students to help finance their education. More recently, graduate assistants assumed so great a share of undergraduate teaching at many universities that they demanded union recognition and wages commensurate with full-time teachers. At Yale University, for example, teaching assistants were teaching almost 40% of all undergraduate courses, including about 30% of social science courses, 34% of humanities courses, 52% of foreign-language courses, and more than 65% of natural science courses. At the University of California's three largest campuses at Berkeley, Los Angeles and San Diego, teaching assistants taught almost all freshman-level courses. Nationally, teaching assistants represented 23.3% of faculty members at undergraduate institutions of higher learning; they taught 13.9% of all courses and 19.8% of introductory courses.

Graduate Management Admission Test (GMAT) A standardized test developed by the EDUCATIONAL TESTING SERVICE in 1954 as a qualifying test for admission to almost all graduate schools of business. Originally called the Admission Test for Graduate Study in Business, the GMAT is administered year-round by computer and consists of five parts, four of which measure skills in reading comprehension, sentence correction, critical reasoning, quantitative problem solving, and logic and reasoning. A fifth part measures writing skills and requires two essays.

Graduate Record Examination (GRE) A standardized two-part testing program developed by the EDUCATIONAL TESTING SERVICE, the GRE is required for entry into most graduate school programs in the arts and sciences, education and journalism. The first part—a general

test offered in both computer-adaptive or paper-based formats—lasts three hours and 40 minutes and consists of three sections that measure verbal skills, quantitative reasoning ability and analytical writing skills. The subject section lasts nearly three hours and is offered in any of the following areas: biochemistry, cell and molecular biology, biology, chemistry, computer science, English literature, mathematics, physics and psychology. About 500,000 students—20% to 25% of them foreigners—take the test each year. After the introduction of the computer-adaptive test, an outbreak of cheating over the Internet across time zones spurred ETS to reduce the frequency with which it administers GREs from almost daily to 30 times a year, and questions are changed on each test.

graduate school An institution of higher learning, usually a part of a university, offering courses in the entire spectrum of arts and sciences at levels higher than those available at four-year colleges. Successful completion of graduate school studies usually leads to the award of a MASTER'S OR DOCTORATE degree in the arts, sciences and a variety of professions. The origin of graduate schools in the United States dates back to colonial-era apprenticeship systems that provided the standard training for physicians, attorneys and other professionals. Apprenticeships consisted of two phases. In the first, the apprentice would "read" theology, medicine, law, etc., studying all appropriate texts and performing routine duties in the office and household of his mentor (professional apprentices were all male). In the second, the apprentice participated actively in his mentor's practice, learning the practical aspects of his profession "on the job" and eventually learning all procedures.

The formation of local and state professional societies during the late 18th and 19th centuries led to licensing procedures to assure

professional standards and deter the untrained from competing with the trained and possibly sully the reputation of the profession. Concurrently, established professionals recognized the value of organizing courses and eventually schools to provide classroom instruction during the reading phase of professional education. Such instruction relieved practicing professionals of those responsibilities, thus freeing them to earn more money in private practice. It also systematized and standardized the formal education portion of professional training. Initially, those professionals most interested in teaching organized their own private schools for profit. Thus, the distinguished lawyer and jurist TAPPING REEVE built the first law school in the United States in 1784—a small frame building in his backyard that he called the Litchfield Law School. With the help of a fellow jurist, he operated the apparently profitable private school until 1833, when competing law schools at Yale, Harvard and Columbia left it wanting for students, and it closed.

The first colleges in the American colonies were theological schools for training ministers and, as such, merit classification as professional schools. As they added secular courses, members of other professions broadened the colleges' curricula. The first colleges to offer courses in law were the COLLEGE OF WILLIAM AND MARY in 1779, the University of Pennsylvania in 1789 and Columbia College in 1794. The University of Pennsylvania was first to offer courses in medicine, and King's College followed suit in 1767.

The UNITED STATES MILITARY ACADEMY was, from its beginning in 1802, an engineering school of sorts, because of the Army's need for bridges and roads. Rensselaer Polytechnic Institute, however, was the first pure engineering college, founded in 1824. As increasing complexity transformed other trades into professions requiring formal classroom education,

colleges expanded professional education to include agriculture, business, dentistry, education, pharmacy, veterinary medicine and other subjects. The Morrill Land Grant College Act of 1862 created a plethora of state agricultural and engineering colleges, and as state after state established public school systems, they also established specialized "NORMAL" SCHOOLS to train teachers.

As the curriculum expanded, colleges were forced to departmentalize their courses. Harvard was first to do so in 1828. The University of Virginia carried departmentalization a step further by dividing its students into eight specialized schools. And the lack of preparation of many students forced colleges to expand the number of basic courses in the liberal arts and sciences needed as a foundation for professional education.

Until the end of the 19th century, college and professional training remained amalgamated in a single four- or five-year course of study. In 1893, however, DANIEL COIT GILMAN, the first president of Johns Hopkins University, established the Johns Hopkins Medical School as the first pure graduate school in the United States, separate from the university but requiring a four-year college (bachelor's) degree as a prerequisite for admission. Harvard University quickly followed suit, and the emergence of the modern graduate school had begun. Of the nearly 17 million students enrolled in institutions of higher learning in the United States, about 12% are in graduate schools and about 2% in professional schools.

(See also individual entries for law school, medical school, engineering and other professions.)

graduate university A university devoted exclusively to graduate school education, with no affiliated undergraduate colleges. Although Johns Hopkins and Clark Universities and the UNIVERSITY OF CHICAGO all opened as graduate

universities, they eventually added undergraduate colleges to assure themselves a broader student base; the undergraduate colleges also provided a stronger cash flow and, initially, a larger pool of potential graduate students. Rockefeller University in New York remains a premier example of today's graduate university, with extensive scientific and medical research facilities and a medical school.

graduation The formal completion of a prescribed course of study at an educational

institution, as attested by the award of a certificate, diploma and/or degree. Such awards are usually made at formal ceremonies, whose origins date back to ordination ceremonies of the theologically oriented European universities of the Middle Ages. Modified only somewhat by such individual institutional traditions as the singing of the school alma mater or the national anthem and the recital of prayers, most graduation ceremonies feature processions of faculty and students dressed in traditional academic robes,



As in the procession shown here at Southern Methodist University, in Dallas, Texas, Graduation Day at schools and colleges across the United States sees students and faculty in full academic regalia. (*Library of Congress*)

the formal award of certificates to individual students and a recessional.

graduation examination A comprehensive examination administered by public high schools in twenty-five states to determine whether graduating seniors qualify for a high school diploma. Because such “exit exams” ignore classroom achievement, grades and other measurable performance in school, state authorities have been the targets of legal challenges for withholding diplomas from students who fail the test after successfully completing all their required classroom work. Some states grant “certificates of completion” to students who successfully complete their high school courses, but fail the state graduation examination, and many colleges—especially community colleges—ignore the results of graduation examinations when considering applicants for admission. Indeed, about 400,000 college students in 2006—about 2% of all college students and 3% of community college students—lacked high school diplomas.

graduation rate The percentage of students who successfully complete their academic programs at an educational institution and receive formal attestation thereof in the form of a certificate, diploma or degree. Often used as a measure of academic quality, the high school graduation rate in the United States has remained at a disgracefully low 69% for the past decade, despite billions of dollars in federal, state and local investments in education reform. The rates for some minorities are even worse—55% for Hispanic students, 53% for black students and 49% for American Indian students, compared with 76% for white students and 78% for Asian students.

At the college level, only 63% of full-time students graduate from American four-year colleges within six years, and only slightly more than 50% graduate in four years. Again, the rates for minorities are lower: 46% for black students

and 47% for Latinos. The graduation rate for low-income students is 54%. Fifty colleges have six-year graduation rates below 20%.

Both college and high school graduation rates can be misleading, however—each for different reasons. College graduation rates range from more than 98% at academically prestigious, private colleges with the strictest admission standards and the wealthiest student bodies in America, to less than 25% at schools with open enrollment, relatively impoverished student bodies and curricula laced with vocational education. Untold thousands of students attend college not to graduate or receive degrees but to study and complete specific courses or groups of courses of particular interest or of value to their trade or career. Moreover, COLLEGE dropouts, unlike high school dropouts, are adults, enrolled voluntarily, and at liberty to leave and re-enroll later—sometimes years later. The longer any student remains at college, the more debt he or she incurs—a situation that can be intolerable for some who are forced to leave and go to work, fully intending to return when they are more solvent. In fact, more than 20% of college students are 25 to 29 years old, 26% between 30 and 40 years old, and 19.5% between 40 and 50—an indication in part that many younger men and women who leave college without graduating do return to complete their degree requirements. Still another factor clouding the significance of overall college graduation rates—and helping to lower those rates—is the low graduation rate for academically unqualified athletes recruited to play on revenue-generating varsity teams. Twenty-three of 56 college teams that played in postseason football bowl games in 2005–06 failed to graduate 50% of their athletes within six years. Indeed, only 34% of the players at the University of Texas campuses at Austin and El Paso managed to complete their studies. Moreover, low college graduation rates may not reflect the educational quality of colleges so much as that of high schools. A study commissioned by the BILL AND MELINDA GATES

FOUNDATION found that 60% of white high school graduates, 78% of black high school graduates, and 80% of Hispanic high school graduates were academically unprepared for college-level work.

High school graduation rates can, therefore, be as misleading as college graduation rates. Any school or district can raise graduation rates by simply lowering academic standards so that they graduate students who might fail at other schools. School officials can also raise graduation rates by including on their rolls student dropouts who sign letters of intent to resume their education at a later date. Because federal aid is dependent on enrollment, such students are merely listed as “on temporary leave” and continue to entitle the school district to federal funding on their behalf.

On a national scale, the low average high school graduation rate may also reflect statistical changes in the school population rather than a failure to improve teaching quality. In the decade from 1991 to 2001, the percentage of black students enrolled in American public schools climbed from 16.4% to 17.2%, while the percentage of Hispanic students leaped from 1.8% to 17.1%. Given the sharply lower graduation rates of the two minorities, the increase in their number necessarily offset a four-point gain in the graduation rate of the shrinking percentage of white students, from 71% to 76%. Also helping to stagnate high school graduation rates was the INDIVIDUALS WITH DISABILITIES EDUCATION ACT, which shifted the burden of educating the majority of children with learning disabilities to public schools. During the 1990s, such “mainstreaming” doubled the number of children with learning and other disabilities in public schools from 1.6 million to more than 6.5 million, or 13.5% of the school population.

grammar The study of the structural and syntactical rules of a language. The ancient Greeks were the first to organize and system-

atize language structure, and the Romans refined the process with the development of syntactical rules. Together, the Greek and Roman rules formed the basis of grammar studies in use to this day. The study of grammar has been an integral part of primary education since the arrival of the first settlers in the American colonies. Grammar became equally integral to secondary school education with the development of academies and secondary schools in the 18th and 19th centuries. Two schools of teaching grammar developed in the late 20th century: the descriptive, or structuralist, school and the universalist school. In the former, which dominated traditional grammar studies throughout the first half of the 20th century, students learn a set of strict rules describing the relationships of speech elements in words and sentences. The latter dispenses with the learning of most rules in favor of simply speaking the language and developing competence by understanding the logic of word relationships and sentence structure.

In simplest terms, descriptive grammar stresses the why as well as the how, while universalists dispense with much of the why, concentrating instead on the how. Universalist methods won increasing favor as public schools decreased the amount of required homework in the decades following World War II. Structuralists contended that the universalist approach to teaching grammar was partially responsible for the decline in national averages in a variety of standardized tests measuring command of grammar and the English language. The decline may equally well have reflected the sharp increase in the percentage of non-English-speaking students in the school population.

grammar school A term in American education that now denotes an elementary or primary school, but originally meant a school that emphasized the study of Latin grammar in preparation for intensive study of the scrip-

tures. The first grammar schools were offshoots of cathedral schools, the very first formal schools of England. Cathedral schools were originally organized by Saint Augustine, along with 40 monks whom Pope Gregory I sent as missionaries to the English in 596. Founder of Christ Church, Canterbury, and consecrated the first archbishop of Canterbury, Augustine established formal schools at the cathedrals and churches he and his disciples founded to introduce education and culture to England. The original curriculum consisted of grammar, rhetoric, logic, arithmetic, geometry, astronomy, music and Latin.

As universities emerged as centers of theological education after the 12th century, the church and cathedral schools concentrated their efforts on Latin grammar and the study of basic Latin texts to prepare youngsters in their late childhood and early adolescence for higher-level theological studies at university. Meanwhile, "PETTY SCHOOLS" developed to prepare younger children for service as choir and altar boys by teaching them "to say, to sing, and to read" and to provide them with elementary instruction in the arts and languages. It was the dual system of petty schools and grammar schools that English churchmen brought with them to the American colonies. Initially conceived as agencies for recruiting and training the parish clergy, these institutions were adapted to ensure the perpetuation of Christianity and still later to prepare young men (women were not admitted) for college and for "public service in church and commonwealth."

Like its English counterpart, American grammar school education lasted seven years, with year-round instruction that permitted youngsters to withdraw temporarily for planting and harvesting. The school day ran from 6 A.M. to 11 A.M. and from 1 P.M. to 4 P.M. in winter and to 5 P.M. in summer. As in England, the curriculum emphasized Latin, but it added an

introduction to Greek and, occasionally, Hebrew, to permit closer reading of Scripture in its original languages. The first grammar school was established in Boston on April 13, 1635, "for the teaching and nurturing of children with us." Boston's Latin Grammar still operates as a public school. Within a decade, at least nine other communities had founded grammar schools. In 1647 the Bay Colony passed the famed School Act, which was the second of the two Massachusetts laws of 1642 and 1647 ordering all communities with 100 or more families or householders to establish a grammar school (and towns of 50 or more families or householders to establish a petty school) to prevent "that old deluder Satan [from keeping] . . . men from the knowledge of the Scriptures." The grammar school began to disappear as an institution in the 19th century, when the more advanced elements of its curriculum were expanded and absorbed into secondary school education, while the petty school curriculum and the elementary grammar school curriculum became the basis for primary school education.

grammar-translation method A traditional method of teaching foreign languages by translation of word lists, sentences and written passages, followed by repeated drill and oral and written practice. Based on traditional techniques of teaching "dead languages," such as Latin and Greek, the grammar-translation method has given way to a variety of teaching methods that emphasize conversational fluency, developed by listening, speaking, reading and writing rather than by mechanical, word-for-word translation.

(See also FOREIGN-LANGUAGE STUDY.)

Grant, Zilpah Polly (1794–1874) A pioneer in women's education and one of the first educators to expand the women's curriculum beyond the range of the so-called domestic and

ornamental arts that prepared women for lives as wives and mothers. Born in Connecticut, Grant lost her father when she was two and began teaching in nearby schools when she was 15. After her mother remarried in 1820, her family was able to afford to send her as both a student and teacher to Byfield (Massachusetts) Female Seminary. Founded by the Rev. JOSEPH EMERSON, Byfield was the first school in the United States to teach its students more than the ornamental arts. In addition to Grant, Byfield's alumnae included such pioneers in women's education as CATHERINE BEECHER and MARY LYON, who went on to found the world's first college for women at Mount Holyoke, Massachusetts.

After two years of teaching, Grant took over as head of the newly founded Adams Female Academy at Londonderry, New Hampshire, in 1824. She left in 1828, following a series of quarrels with the trustees over her attempts to expand secular instruction beyond the ornamental and domestic arts into the liberal arts that were then taught only to men. Declining an offer of \$1,000 a year to serve as principal of Catherine Beecher's world-famous Hartford Female Seminary, she moved to Ipswich, Massachusetts, where she opened the Ipswich Female Seminary in collaboration with Mary Lyon, her former schoolmate and friend from Byfield. With Grant as principal and Lyon as a teacher and assistant principal, Ipswich became one of the first schools to train women for careers as teachers. In 1839, Grant resigned due to poor health, and her failure to raise funds for an endowment to sustain the school eventually led to its closing. It was a financial lesson not lost on Lyon, who, after raising funds to found Mount Holyoke, went on to raise an endowment that helped assure its survival to this day. Grant never returned to teaching. In 1841, two years after her retirement, she married a prominent Massachusetts lawyer, William Bostwick Bannister, whose family

name she assumed and by which she is sometimes referred to in educational references.

grant (grant-in-aid) An outright cash gift tied to specific performance obligations of the grantee. In education, there are two broad categories of grants: from the federal government to states, local agencies, educational institutions and individuals to support educational or research programs; and from government agencies, private organizations and educational institutions to individual students to underwrite part or all of their education.

(See also FINANCIAL AID.)

gratification, delay of A not uncommon error of primary and secondary schoolteachers, particularly in their occasional neglect to return graded papers soon enough to serve as effective reinforcement for student academic behavior. Immediate reward is deemed essential reinforcement for children in childhood and early adolescence, and such delays only weaken the relevance of the reward to the behavior it is designed to reinforce.

(See also CONDITIONING.)

Gratz v. Bollinger A landmark U.S. Supreme Court decision in June 2003 banning the University of Michigan's use of a "point system" that arbitrarily awarded a wide range of values to different elements in college applications—SAT scores, high school grades, extracurricular activities, gender and so forth—and gave undue weight to race and membership in nonwhite minority groups. One of two class-action suits against the university's president by groups of white applicants, *Gratz v. Bollinger* produced a victory for the plaintiffs, with the Supreme Court ruling against the university's use of a point scale in evaluating undergraduate admissions applications. Under the university's 150-point system, applicants needed an accumulation of 100 points to win admissions, and minority status as

a black, Hispanic or American Indian was worth a disproportionate 20-point “race” bonus—the same amount awarded for a 4.0, or perfect, high school grade point average. Although the Court did not disallow consideration of race in the evaluation of admissions applications, it banned the university—and, by inference, all colleges and universities—from giving it more weight in admissions considerations than any other “personal characteristics,” such as being an Eagle Scout, president of the class or captain of the football team.

(See also *AFFIRMATIVE ACTION*; *GRUTTER V. BOLLINGER*.)

Gray, William S. (1885–1960) American educator, best remembered as creator of the ubiquitous “DICK AND JANE” BOOKS that served as first and second readers for children in almost every American elementary school from the 1920s until shortly after World War II. Thereafter, the development of more advanced (and entertaining) methods of teaching reading sent Dick and Jane into oblivion. A pioneer in the development of modern methods of teaching, Gray was born and educated in Illinois. Trained as a teacher, he earned his Ph.D. from the University of Chicago, where he was a faculty member from 1914 to 1950 and dean of the college of education from 1917 to 1931. He introduced a course in the teaching of reading at Chicago and organized the first of what would become annual reading conferences there. A prolific author of books and articles on methods of teaching reading and writing and the training of teachers in those methods, he also wrote many basic readers for children and helped found the International Reading Association.

Great Awakening (The) A massive, 18th-century eruption of evangelistic fervor that swept the American colonies, provoking a social and political, as well as religious, awakening that eventually fueled the American Rev-

olution. The Great Awakening began in the 1720s, when such charismatic clergymen and evangelists as Theodorus Jacobus Frelinghuyzen, William Tennent, George Whitefield and JONATHAN EDWARDS developed an entirely new and liberating religious philosophy based on the simple, literal biblical precept that God created man in his image.

As Whitefield, Edwards and their fellow evangelists toured the East with their revolutionary message of equality before God, huge throngs crowded to hear them and receive assurances of universal salvation. The Great Awakening promised to the poor and the rich, the landed and the unpropertied and the unchurched as well as church members, redemption through personal conversion, that is, a deeply emotional, personal acceptance of and commitment to Christ.

The Great Awakening split communities and their church congregations into traditional “Old Light” and radical “New Light” groupings that propagated logarithmic increases in the number of churches and sects in the United States. Because the church remained the center of all spiritual and secular instruction, the new churches, with their all-encompassing democratic embrace of all who would join them, produced a popular lust for education among those who had previously considered schooling reserved for those of higher social stations. The sheer number of new churches expanded the reach of education and taught an entire generation of American-born children and their parents that they were the equals of their parliamentary rulers.

Although it created widespread discord and, in effect, destroyed the religious harmony and unity that the Puritans, Presbyterians and Anglicans had established, the Great Awakening produced a fervor that unified many colonists in rebellion against an oppressive class system. The burden of ever-increasing parliamentary taxes helped solidify that unity and

eventually convert the fervor of the Great Awakening and the rebellion against the Church of England into a rebellion against England itself.

Great Books Program (The) A curriculum based on the study of an arbitrarily selected group of classic works of philosophy, literature, history and science that some educators consider the foundation of all worthwhile human knowledge. Developed in 1947 by Robert M. Hutchins, president of the UNIVERSITY OF CHICAGO, and his assistant, philosophy professor MORTIMER J. ADLER, the Great Books Program is a modern variation of the traditional CLASSICAL EDUCATION curriculum developed from the 15th through the 18th century. To the earlier works of the great writers of ancient Greece and Rome, the Great Books Program added works by modern writers and philosophers that the program's editors deemed worthy.

Hutchins and Adler were concerned that the PROGRESSIVE EDUCATION movement was eroding the value of American education by converting the primary and secondary school curriculum from classical to utilitarian subjects that would deprive Americans of the collected wisdom of the Western world. Ironically, both concepts—progressive education and the Great Books curriculum—had their roots at the University of Chicago, where John Dewey fathered progressive education at the university's Laboratory School at the same time that founding president WILLIAM RAINEY HARPER, Dewey's patron, was helping to select and edit the World's Great Books. Arguing that all Americans should be schooled in the classic disciplines of grammar, rhetoric, logic, mathematics and the great books of the Western world, Hutchins and Adler redirected the focus of the university, abolishing football and reorganizing the curriculum into one that emphasized reading and discussion of the classics of the Western tradition. They also

instituted a four-year liberal arts program that began in junior year of high school, thus extending their concept into secondary school education. At the same time, they founded the Great Books Foundation to produce a series of books containing classical works of literature, poetry and essays. The works were selected to provide a fundamental education for adults whom the Great Depression of the 1930s and World War II had deprived of secondary school education and exposure to the classics.

In 1952, Hutchins and Adler produced and edited the 54-volume Great Books of the Western World, which provided libraries, schools and individual families with what Hutchins and Adler considered the collected wisdom of the ages. By the early 1960s, the foundation had saturated the market with its encyclopedic work and began to produce a short series of paperbacks for youngsters, with short stories, poetry, essays and other works designed for students from second grade through high school. In addition to works by modern writers, the Junior Great Books Program, as it was called, also helped improve teacher skills as discussion leaders. Still used in many programs for gifted students, the Junior Great Books Program emphasizes story interpretation based on shared inquiry and on freewheeling classroom discussions that encourage student understanding and love of literature.

Greater Cleveland Mathematics Program (GCMP) A system of teaching mathematics to elementary school children based on logic and abstract concepts rather than rote memorization of tables. More popularly called "NEW MATH," GCMP was developed in 1959 by the Educational Research Council of Greater Cleveland for grades K–6, to serve as the foundation for the secondary school new math curriculum that had been developed earlier by the School Mathematics Study Group.

The underlying principle of new math was to teach young children mathematics the same way they learn language in infancy, by gradual accumulation of logical concepts. Based on theories of how primitive man may have developed mathematical concepts, GCMP eschewed rote learning of number tables in favor of the set theory. In simplest terms, primitive man could not read, write or count, but he could recognize the concept of equal sets and maintain tight inventory controls of, say, his herd of sheep. Thus, if he released his herd of sheep to graze, he could accumulate a set of pebbles on the ground, equating each pebble for each animal released and then removing each pebble at the end of the day for each sheep that returned. Despite his inability to count, the herdsman knew that an unretrieved pebble was equal to a missing sheep and that a set of pebbles had to equal a set of sheep.

Although of great interest to theoretical mathematicians, GCMP and the new math generally had to be modified radically and in many cases abandoned as it became clear from standardized tests that many children were growing up understanding set theories but unable to count or calculate accurately. New math concepts continue to be taught, but only in conjunction with (or after) traditional methods have provided students with a firm foundation in computational skills.

Greek (classical) The language of ancient Greece, the study of which was required, along with Latin and Hebrew, in 17th-century English and colonial American schools and colleges, so that ancient literature, philosophy, logic and rhetoric, and Scripture could be examined in their original languages. Designed to prepare young men for the clergy, grammar schools and colleges required fluency in the three scriptural languages: Latin, Greek and Hebrew. Even with the 18th-century secularization of American schools and colleges, the study of Greek (and

Latin) grammar and literature remained a requirement in the classical curriculum of most private secondary schools and colleges until the end of the 19th century, when the sciences and utilitarian courses gradually squeezed Greek out of the curriculum. By the end of World War I, it had disappeared from the curriculum of most secondary schools and was available only as an elective in a relatively small number of American colleges. In 2002, American colleges and universities awarded only 33 bachelor's degrees, 8 master's degrees and 1 Ph.D. in classical Greek.

Green v. County School Board of New Kent County A 1968 U.S. Supreme Court decision that struck down a desegregation plan allowing black and white students in New Kent County to choose whether or not they wanted to attend formerly all-black or all-white schools. The case was the first of three that effectively ended widespread local resistance in the South to the 1954 Supreme Court decision in *BROWN V. BOARD OF EDUCATION OF TOPEKA*. That decision had declared racial segregation of schools unconstitutional and ordered schools throughout the South to desegregate with "all deliberate speed." Despite the Court order and others from a plethora of federal district courts, hundreds of southern school districts developed plans that seemed to provide for desegregation, on paper, but in practice produced no actual change in the racial makeup of local schools. The New Kent County "freedom of choice" or "free transfer" plan was one of these.

By 1968, however, Congress had passed the Civil Rights Act of 1964 and the education acts of 1965, which reinforced the *Brown* decision, and the Court was losing patience with school districts that were flouting its authority as well as the laws of the United States. In *Green* and two cases the following year, the Supreme Court crushed all remaining efforts to resist desegregation with three sweeping decisions

that left no loopholes for any school in the nation to violate the law. In *Green*, the Court charged school boards "with the affirmative duty to take whatever steps might be necessary to convert a unitary system in which racial discrimination would be eliminated root and branch." The Court said it would hold in contempt any school in which 85% or more of the students were black. New Kent County and all other school boards were ordered to "convert promptly to a system without a 'white' school and a 'Negro' school, but just schools."

The two cases that followed in 1969 were equally forceful and far-reaching. In *Alexander v. Holmes*, the Court angrily defined the word "promptly" in its *Green* decision as meaning "at once," and it ordered every school district in the South "to terminate dual school systems at once and to operate new and hereafter only unitary schools." In *United States v. Montgomery County Board of Education* later that year, the Supreme Court established racial ratios for teachers, while reaffirming its 85% rule for students from the *Green* decision.

Griffin v. County School Board of Prince Edward County A landmark decision by the U.S. Supreme Court in 1964, affirming the right of federal courts to levy taxes and raise funds to reopen public schools when local school boards fail to do so. Prince Edward County had been involved in one of the four original cases that were grouped together in *BROWN V. BOARD OF EDUCATION OF TOPEKA* in 1954, when the Court declared racial segregation of schools unconstitutional and ordered all school boards to desegregate schools "with all deliberate speed." Prince Edward County, however, closed its public schools rather than permit racial integration, but it then used public moneys to support a group of private schools that white parents had opened for their children. Black children, in the meantime, had no schools until 1963, when a privately financed

group opened a few inadequate emergency schools. In affirming the right of lower federal courts to assume all school board functions, the Court held that "the time for mere 'deliberate speed' has run out . . . There has been entirely too much deliberation and not enough speed in enforcing constitutional rights which we held [in 1954] had been denied Prince Edward County Negro children." The Court effectively barred local officials from giving any financial aid to pupils in private schools, and it barred the flow of state funds to any public schools elsewhere in the state until Prince Edward County public schools reopened as racially integrated schools.

group counseling (guidance) The simultaneous dispensing of universally applicable advice by a trained professional to groups of usually no more than 10 students. Group counseling and guidance may touch on as wide a range of topics as personal problems, intersocial problems, college selection, improvement of study skills, and techniques of taking job interviews. With public school GUIDANCE COUNSELORS responsible for counseling an average of more than 600 students per year, group counseling permits efficient distribution of universally applicable advice and information to groups small enough to permit ample student responses and questions to and interaction with the counselor. In addition to distributing information and advice to more students in a shorter period of time, group counseling has several advantages over one-to-one counseling in that it permits students to meet and talk with other students with similar problems, to obtain group support and develop new interpersonal relationships.

group dynamics The individual, interpersonal social responses peculiar to individuals functioning in small groups, usually defined as 10 people or fewer. Group dynamics, or group

psychology, which differ dramatically from individual or mob psychology, were first studied as a separate psychological concept in the 1920s by social psychologists such as Kurt Lewin (1890–1947), who focused on such phenomena as group structure, group atmosphere and goals, and group leadership characteristics (democratic, autocratic and so on). Later studies of group social processes such as group decision making and development of strategies for leading and persuading groups provided essential pedagogical materials for teachers of all age groups.

Grube Method An obsolete but once widely used method of teaching mathematics developed in 1842 by A. W. Grube, an otherwise obscure mathematics instructor. Instead of teaching one arithmetical process at a time—for example, by learning all combinations of adding numbers from 1 to 10—the Grube Method taught all four processes simultaneously for each successive number in combinations with smaller numbers. For example, students would learn all processes for the number 2 by writing and memorizing $2 = 1 + 1$; $2 - 1 = 1$; $2 - 2 = 0$; $2 = 2 \times 1$; $2 = 1 \times 2$; $2/1 = 2$; $2/2 = 1$. Each successive number produced more and more combinations—10 for the number 3, 13 for 4, and so on. The method was abandoned by the end of the 19th century in favor of more effective and less boring methods of instruction.

Grutter v. Bollinger A U.S. Supreme Court decision in June 2003 upholding the principle of affirmative action in the University of Michigan Law School admissions process. Filed by a group of white applicant against the university's president, the suit sought to force the law school to evaluate applicants on a race-blind basis, but the Court upheld the right of the school to take race into consideration so long as it did not weight race more heavily in the application

process than any other characteristics, such as being a class officer or team captain.

(See also AFFIRMATIVE ACTION; GRATZ V. BOLLINGER)

Guam An island territory of the United States in the western Pacific Ocean, midway between the International Date Line and the Philippine Islands and at about the same latitude as the Philippines. It was ceded to the United States by Spain in 1898, following the Spanish-American War. Captured by the Japanese in 1941, it was recaptured in 1944, and in 1950 citizenship was granted to the indigenous Guamanians, or Chamorro, who now constitute less than half the population. Micronesian in origin, they speak their own language, although English is the official language taught in schools. The majority of the nearly 150,000 inhabitants in 1998 were U.S. Army, Navy and Air Force personnel and support staffs. Guam has more than 33,000 students enrolled in its three dozen elementary and five secondary schools. Guam has two institutions of higher education, which serve both the local and military communities: The University of Guam, a four-year liberal arts university with more than 5,000 students and more than 300 faculty, and Guam Community College, with more than 2,000 students and nearly 200 faculty.

guidance In education, the proffering of advice and counsel to students by trained specialists with a minimum of one or two years of graduate study in counseling and state certificates as guidance counselors. Guidance may be proffered on a one-to-one or group (see GROUP COUNSELING) basis, depending on the student's particular needs. In broadest terms, guidance services are designed to help students adapt successfully to their school environment, academically, socially and developmentally. Individualized, one-to-one counseling may, depending on the student, cover a wide range of personal problems

such as academics; college selection; school or class transfers; study skills; career choices; job-application skills (interviews, resumes, etc.); emotional, physical or developmental problems; peer relations; teacher relations; or home- or neighborhood-related problems.

Until 1950, teachers routinely served as student advisers, but as educators recognized the need for special training to cope with student counseling, the guidance counselor began appearing in schools as a full-time, nonclassroom instructional staff member to provide one-to-one counseling of individual students and to consult with teachers and parents about individual student problems. As the number of guidance counselors increased, guidance departments assumed increasingly important administrative functions such as maintaining cumulative student records; providing school recommendations for college admission and job applications; coordinating standardized testing programs such as the Scholastic Assessment Tests for college-bound students; providing career counseling services; arranging school appearances by outside advisers and counselors from colleges and companies; and developing working relationships with outside counseling, welfare and law enforcement agencies that might affect the lives of students.

In the 1960s and 1970s, the guidance counselor's role began to expand still further, as American families became more dysfunctional and gradually left half the children in the United States in single-parent homes. The result was a surge in the number of troubled children who turned to guidance counselors for help in dealing with such problems as parental negligence, parental physical or sexual abuse, hunger and malnutrition, drug and alcohol abuse, teenage pregnancy, the threat of peer violence and survival in gang-infested neighborhoods ablaze with gunfire.

By 2001, the number of full-time guidance counselors in American public schools

had climbed to more than 100,000, or 2.5% of the nation's public-school instructional staff. Each guidance counselor had an average of about 140 students to counsel, with understaffed schools often assigning as many as 1,000 students to each counselor. Although an increasing number of guidance counselors are appearing in elementary schools, more than 90% of all guidance counselors work with adolescents in middle schools and high schools.

guide words The first and last bold-faced "keywords" on each page of a dictionary, encyclopedia or other reference work; usually printed on the top left and right corners of each page. Also known as running heads, these are an important element in teaching children how to use reference works.

Gulick, Luther (1865–1918) Physician, educator and "father" of physical education as a standard element of the public elementary and secondary school curriculum in the United States. Born in Honolulu to a family of Congregationalist missionaries, the deeply religious Gulick was plagued by a lifelong series of illnesses from which physical exercise, learned in 1885 at the Sargent School of Physical Training (now Sargent College of Boston University), provided the only respite. Imbued with the missionary spirit inherited from his family, he joined the YOUNG MEN'S CHRISTIAN ASSOCIATION in 1886 to teach physical education and train gymnasium instructors at the Training School in Springfield, Massachusetts (now Springfield College). He remained there for the next 17 years, developing a philosophy of education that placed physical training at the heart of the YMCA's expanding educational program. He designed the association's triangular emblem, representing the three elements of the whole man: physical, spiritual and social.



Luther Gulick (Library of Congress)

Little by little Gulick developed what would later become the modern physical education curriculum of American public schools. With Robert J. Roberts, YMCA worker who invented the ordered series of exercises he called "body building," Gulick put together a program of "safe, easy, short, beneficial and pleasant" exercises and games that he introduced at the Training School in Springfield and then at YMCA branches across the nation. Among the games that Gulick developed was one that his Canadian-born student James Naismith invented—basketball. Like other elements of the program, it was designed as a physical education activity that was easy to learn for all age groups, playable indoors and out, free of violence and conducive to all-around development. By the time Gulick retired from YMCA work in 1903, he had inspired the

construction of gymnasiums, swimming pools, physical education programs and athletic leagues in YMCAs across the United States.

In 1903, Gulick became director of physical education of the New York City public schools for three years, during which time he introduced and integrated physical education and hygiene instruction into the curriculum and organized the Public School Athletic League. In 1906, he helped found the Playground Association of America, which made public playgrounds a nationwide objective and, eventually, a ubiquitous element of every public park in the United States. In 1910, he helped found the BOY SCOUTS OF AMERICA, and two years later, he and his wife founded the CAMP FIRE GIRLS, a recreational, educational and service organization for young girls. A graduate of New York University Medical School (1889), he was a member of the American Medical Association and other medical societies, and he was a member of Olympic Games committees in 1906 and 1908.

gymnasium A large, peculiarly American room or building in which students may participate in either formal or informal physical exercise, games, sports and dance. Usually equipped with a variety of equipment for GYMNASTICS and such sports as basketball and volleyball, gymnasia began to be added to school, college and university plants at the end of 19th century, after LUTHER GULICK developed formal physical education programs for elementary and secondary school curricula.

The word *gymnasium*, however, has other meanings in other parts of the world. Derived from the ancient Greek *gymnos*, meaning "naked," the Greek *gymnasion* was an outdoor exercise ground, where as early as 500 B.C. free Greeks and their children socialized and participated in physical and intellectual exercises deemed essential to the unity of the total being. Exercises were also deemed important for

keeping young men fit for service in wartime. The most famous examples of the Greek *gymnasia* were the ACADEMY, which Plato (428–348? B.C.) founded in Athens in 387 B.C. and where he spent the rest of his life as a teacher, and the LYCEUM, where Aristotle (384–322 B.C.) taught from 335 to 323 B.C.

Transferred to Rome the institution went the way of the Roman Empire and was not revived until the 16th century, when German humanists emancipated education from church control by building their own schools, which they called *Gymnasien*, in reference to the traditional secular arts taught in ancient Greece. The word became the standard German word for any secular, nontechnical secondary school specializing in the traditional liberal arts. It had no association with physical education. Indeed, gymnastics in Germany is practiced in *Turnvereins*, or gymnastics clubs, and the only exercises practiced in *Gymnasien* are academic.

The gymnasium's association with physical exercise was not reestablished until Americans adopted the word as meaning a room for the practice of gymnastics, which was introduced in the United States in the 19th century by German and Swedish immigrants (perhaps graduates of *Gymnasien*, whose meaning Americans may have misinterpreted). Today's *gymnasia* range from relatively small, sparsely equipped, all-purpose playrooms in elementary schools to enormous, multi-sport college facilities, with space and equipment for basketball, volleyball, gymnastics and other sports and grandstands for spectators. Because of their small physical size and student populations, elementary school *gymnasia* are usually multi-

ple-purpose facilities, with collapsible equipment that allows them to be converted into school cafeterias, auditoria, conference rooms and classrooms.

gymnastics A systematic grouping of physical exercises designed to improve student strength, rhythm, balance, flexibility and agility. Although used in informal physical fitness programs at both the elementary and secondary school levels, gymnastics is also a competitive sport, consisting of a prescribed set of dance-like, tumbling routines and acrobatics on special equipment such as suspended metal rings, parallel bars and other devices. Gymnastics probably dates back to the circus acrobatics of ancient Egypt. Teachers in the *gymnasia* of ancient Greece refined gymnastics into three systems of prescribed exercises to develop physical fitness appropriate for soldiers, athletes and the general citizenry, respectively. Although the Romans adopted the Greek system for training soldiers, acrobatics all but disappeared until the early 1800s, when the so-called father of gymnastics, Friedrich Ludwig Jahn (1778–1852), developed a series of planned exercises using rudimentary stationary devices to help practitioners develop self-discipline and physical strength. Meanwhile, Pehr Henrik Ling (1776–1839) was developing a system in Sweden, using hoops, clubs and small balls, and designed to develop rhythm and coordination. Although Swedish and German immigrants brought both systems to the United States after the Civil War, the two were merged in the first physical education programs introduced in American schools at the end of the 19th century.

halfway house A home or other living facility that serves as a transitional residence for youngsters or adults following their release from an institution and prior to their return to a stable, permanent residence. Often called a “bridge” between institutional and conventional community life, the halfway house is designed to provide the support services and structured environment of a residential institution (including personal counseling and strict rules and regulations governing conduct) in a noninstitutional environment that approaches normal home life as much as possible. Usually run by trained cottage parents, or couples who serve as foster parents, halfway houses attempt to recreate the stability of conventional family life and teach youngsters how to cope with the stresses as well as joys of that environment. Although most halfway houses serve adult populations, many shelter preadolescent and adolescent (as well as adult) students who, once settled into the halfway house routine, enroll in local public or private schools.

(See also COTTAGE SYSTEM.)

Hall, G. Stanley (1844–1924) American psychologist, educator, philosopher, college president, pioneer in the field of child psychology and founder-leader of the child study movement that revolutionized and modernized American primary and secondary education. A towering figure in the history of

American education, Hall was born in Massachusetts and graduated with a B.A. and M.A. from Williams College. He did not earn his Ph.D. until 1878, after an abortive period of study for the clergy and a stint as a reporter of the Franco-Prussian War for American newspapers and periodicals. Returning to the United States, he taught literature and philosophy at Antioch College and then at Harvard, where he also earned his Ph.D. and developed a deep interest in psychology. After a year’s study in Germany, he returned to Massachusetts as a lecturer in the new field of educational psychology at Harvard for the 1880–81 academic year. His work earned him a professorship in psychology at the recently founded Johns Hopkins University, along with a special lectureship in pedagogics and a \$1,000 grant to establish one of the first psychology laboratories in the United States. He remained there seven years, applying the ideas of Charles Darwin and emerging European theorists in psychology to develop entirely new theories of child development, child psychology and educational psychology.

By 1888, his work had gained international attention, attracting such students as James Cattell and JOHN DEWEY to his laboratory. In that year, millionaire hardware king Jonas Clark decided to found a world-renowned graduate research university in the developing science of psychology, and he named Hall

founding president of Clark University, in Worcester, Massachusetts. Hall also served as professor of psychology and created a new science of child development that gave rise to a new science of education. Basing his work on massive, never-before-attempted empirical studies of children's behavior, Hall electrified the world of education and forever changed the way Americans raised and educated their children. The transformation he effected in the world of education eventually transformed American society. Enlisting women's clubs across the United States, Hall organized a national crusade of mothers who eagerly noted and reported to Hall's researchers every aspect of their children's physical, moral, intellectual and emotional behavior and development. Hall and his researchers transformed the raw data into reports that explained the origins of every aspect of child behavior at every given age: lying, loyalty, sexual activity, imagination, fear, anger, and rises and falls of interest in various school subjects from literature and history to geography and arithmetic.

Hall's inescapable conclusions startled educators, parents, clergymen and the entire thinking of adults regarding children. Contrary to universal beliefs of the day, children were not little adults, Hall said. Rather, they were fundamentally different beings, with different fears, angers, ideas of truth and falsehood and abilities to distinguish between reality and imagination. Like Darwin's earliest humans, children had to evolve and develop naturally into adulthood, virtually recapitulating the evolutionary experience of the human race in the course of their infancy, childhood and adolescence. As Hall summarized it, "Ontogeny recapitulates phylogeny." The traditional efforts of teachers, parents and clergy to "meddle, constrain, prohibit and punish" was, in effect, to defy the laws of nature and threaten the emotional, intellectual and physical health of children.

A pound of health, growth and heredity is worth a ton of instruction. The guardians of the young should strive first of all to keep out of nature's way, and to prevent harm, and should merit the proud title defenders of the happiness and rights of children. They should feel profoundly that childhood, as it comes fresh from the hands of God, is not corrupt, but illustrates the survival of the most consummate thing in the world; they should be convinced that there is nothing else so worthy of love, reverence, and service as the body and soul of the growing child.

The tens of thousands of mothers who had contributed to his research formed an army of zealous converts who abandoned the traditional Puritan belief in the need to "beat the devil" out of children, whom clerics believed were born tainted with original sin. Instead, Hall called on parents to treat children as the young animals they were and give them enough free rein to develop and evolve into adults instead of prematurely imposing adult standards that children cannot possibly meet. Schools, in turn, were urged to extend the informalities of kindergarten into the elementary grades and to adjust pedagogical methods and curricula to children's natural development, interests and needs. His earlier works, *The Contents of Children's Minds* (1883) and *Hints Toward a Select and Descriptive Bibliography of Education* (with John Mansfield, 1886) became essential texts for teacher training everywhere.

The result of Hall's work was one of the most stunning transformations in the history of American education. After three centuries of schooling that forced the child to adapt to the demands of the institution, Hall's findings ushered in a new era of pedocentric schooling in which schools adapted to the needs of children. The change was swift, as schools across the United States introduced art, music, gardening, manual training, domestic science and physical education into the school curriculum

and added playgrounds and other recreational facilities that introduced a measure of recreation as a temporary respite to the tedium of a long day of academics.

Hall's work made child study a national movement, with Clark University its headquarters where, years later, such leaders in the field as Sigmund Freud and John Dewey came to lecture. Hall founded the Child Study Association of America in 1888 to encourage further studies of child development and teaching methods, and he published the results of those studies in *Pedagogical Seminary*, the national journal he founded and edited. Thousands of the mothers who had been inspired to provide the research for Hall eventually formed the National Congress of Mothers (later, the National Congress of Parents and Teachers, or PTA).

In 1904, Hall once again electrified parents and educators with a two-volume work: *Adolescence: Its Psychology and Its Relation to Physiology, Anthropology, Sociology, Sex, Crime, Religion, and Education*. With hundreds of thousands of homeless adolescents wandering the streets of major cities, unable to find work and dependent for survival on crime and prostitution, Hall's book, together with the equally stunning *Youth—Its Education, Regimen, and Hygiene* the following year, mobilized the growing national movement for educational, social and penal reforms. States raised the ages covered by compulsory education laws, extended the length of the school year and built huge networks of secondary schools to provide for the education of adolescents, only 10% of whom attended schools at the time of Hall's books.

Voluntary groups established huge new social service organizations such as the Boys' Clubs of America (1906), the Boy Scouts of America (1910), the Camp Fire Girls and Girl Scouts (both in 1912) to meet other out-of-school needs of adolescents through recreation, camping and education in hygiene and thus

get them off the streets. Hall's work inspired social reformers to demand enactment of child labor laws and changes in the penal system that would lead to the establishment of juvenile courts.

A prolific writer with more than 500 works to his credit, Hall coined more than 300 new words now standard in the vocabulary of education and child psychology. He was a founder and first president of the American Psychological Association, and he was editor of the *American Journal of Psychology* (1887–1921), the *American Journal of Religious Psychology and Education* (1904–15) and the *Journal of Applied Psychology* (1917–24). During his tenure at Clark, from 1888 to 1920, he established the first institute of child psychology in the United States. His other important works include *Educational Problems* (2 vols., 1911) and his autobiography, *Life and Confessions of a Psychologist* (1923), which appeared the year before he died.

halo effect A distortion of test results and ratings, based on observer bias in assessing test results and in making observations. Halo effect distortions may be positive or negative and may be eliminated by objectivizing scoring to eliminate bias. The halo effect is most evident in the administration of nonwritten tests, ranging from intelligence tests for preschoolers to oral examinations for doctoral candidates. In both instances, observer bias can result from nothing more complicated than a child's smile or frown or a doctoral candidate's personality. In the area of written tests, the halo effect increases in direct proportion to the degree of subjectivity in scoring. Thus, it is more evident in humanities courses than in science and mathematics courses. It can be reduced by objectivizing grading procedures as much as possible, i.e., by specifically listing topics and subtopics students must mention and/or discuss in each paper or examination.

Hampton Institute The original name of Hampton University, founded in 1868 by SAMUEL CHAPMAN ARMSTRONG “to train selected Negro youth . . . [to] lead their people . . .” Now a private, coeducational liberal arts university, with more than 4,500 students (95% black), Hampton Normal and Industrial Institute, which was its official original name, opened as an all-purpose school in a converted mansion on an antebellum estate near Hampton, Virginia. After the Civil War, tens of thousands of freed slaves flocked to Union Army camps for food, clothing and work opportunities. Formerly a colonel in command of the

Ninth Regiment, U.S. Colored Troops, Armstrong was appointed superintendent of education for the FREEDMEN’S BUREAU after the war and took charge of a huge encampment of several thousand illiterate and destitute former slaves near Hampton.

Born and raised on Maui, in the Sandwich Islands (Hawaii), Armstrong had helped his missionary parents develop the Hilo Manual Labor School for native Hawaiians, and he used this as a model for developing Hampton. With funds and teachers from the American Missionary Association, Armstrong combined academic and manual training in a three-year



An African-American student learns weaving at Hampton Institute, Virginia. (*Library of Congress*)

curriculum that included reading, writing and language skills, mathematics, history, natural science, an agricultural course, a commercial course and a course in mechanics. Hampton became a model for dozens of similar schools throughout the South, including the TUSKEGEE INSTITUTE, founded by Hampton graduate Booker T. Washington.

(See also HAMPTON-TUSKEGEE MODEL.)

Hampton-Tuskegee Model A system of education developed after the Civil War to provide social, vocational and academic training for former slaves. First introduced in Virginia at the HAMPTON INSTITUTE, it was refined at TUSKEGEE INSTITUTE by its founding president, BOOKER T. WASHINGTON. Confronted with the task of educating thousands of destitute, illiterate and unskilled former black slaves, SAMUEL CHAPMAN ARMSTRONG, the superintendent of education for the FREEDMAN'S BUREAU, converted an antebellum mansion in Hampton, Virginia, into a school that combined social, academic and manual training in a three-year curriculum that included reading, writing and language skills, mathematics, history, natural science, an agricultural course, a commercial course and a course in mechanics. It also taught all the basics of hygiene and the living customs of white homes, such as the use of beds, sheets and other linens, which were unknown in slave quarters. After completing his education at Hampton in 1878, Booker T. Washington served on the faculty at Hampton until 1881, when he founded Tuskegee Institute in Tuskegee, Alabama. Starting with the basic social, academic and hygiene instruction of the Hampton model, Washington added a teacher-training program and an expanded program of industrial training that covered the range of agricultural, construction and textile manufacturing skills.

The Hampton-Tuskegee Model of education that emerged, with industrial training at

its core, came under sharp criticism from northern black academics such as W. E. B. DuBois, who claimed it failed to prepare young blacks for professional careers and leadership roles. Industrial education alone, they contended, would never win civil and political equality for blacks. Supporters of the Hampton-Tuskegee Model scoffed at the notion that academic education alone would have any value to backward, illiterate former slaves of the South. "The plow, the anvil, the hammer, the broom, the frying pan and the needle must be used to supplement the customary instruction," wrote Thomas Jesse Jones, educational director of the African Education Commission and a former member of the Hampton faculty. Writing of Armstrong's original scheme in a 1922 commission report, Jones declared, "He [Armstrong] saw that . . . education must be vitally related to the needs of the people as they took up their work as freemen. . . . He saw that the training in agriculture, in industry and in home economics could not only be made to subserve a useful end, but the processes used in acquiring skill as a farmer, as a mechanic, or as a cook . . . have large educational value, both mental and moral." Jones's report was used by the British Colonial Office and several North American and European mission societies as standard educational policy in the countries of east, west, south and equatorial Africa.

Handbook of Trade and Technical Careers and Training A complete directory of careers that do not require degrees from four-year colleges for entry-level positions and eventual progression to the highest level of each field. Published every two years by the U.S. Department of Labor Bureau of Labor Statistics, and better known as the *Occupational Outlook Handbook*, the directory lists job descriptions for each career, entry-level and potential earnings after five years, specific training required, outlook for each industry and all other relevant

information a job applicant might want to know. The *Handbook* is available in print or electronic format at all public libraries, many high school guidance offices and libraries and from either the Superintendent of Documents, Washington, D.C., or the U.S. Labor Department Bureau of Labor Statistics Publication Sales Center.

handedness The consistent use of one hand by itself or in dominance of the second hand in the performance of manual tasks. Handedness can be important in the elementary and secondary school classroom, where almost all equipment is designed for right-handed people and can cause difficulties for left-handed students. Historically, left-handedness, or sinistrality, was considered a bad omen in ancient Rome, and later as the work of the devil among some Christians. The word *sinister*, or evil, remains a synonym for “left” in Italian, and the French word for “left,” *gauche*, remains a synonym for “clumsy” or “ill-mannered.”

As late as the mid-20th century, teachers theorized that left-handedness was an abnormality and routinely forced left-handed students to convert to right-handed writing to avoid penetrating the paper with pen tips and writing in what appeared to be a contorted position. Until psychologists pointed out the damaging emotional and, often, academic effect of such enforced practices, only 2% of American children learned to write with their left hands. However, there are no measurable differences in the intelligence, academic performance or social and athletic skills of left- and right-handed students. Determined by cerebral dominance, which, in turn, is genetically determined, handedness, or laterality, varies in degree from extreme right-handedness (dexterity) to extreme left-handedness (sinistrality). About 75% of humans are right-handed and 90% predominantly right-handed. The remaining 10% fall somewhere between each

extreme, exhibiting varying degrees of lateral or mixed dominance, performing a variety of activities with opposite hands—e.g., throwing right-handed but writing left-handed. Another form of mixed dominance is ambidexterity, which allows the individual to perform any activity equally well with either hand. The cerebral dominance that affects handedness also affects leg action, seeing, hearing and other bodily functions, although the dominant side of one function may not coincide with the dominant sides of other functions.

handicaps For educational purposes, any physical, emotional or intellectual disability that so interferes with classroom achievement as to require special education or equipment. The percentage of handicapped children in American public schools is about 13% to 14%. Among the most widely seen handicaps in the classroom are various degrees of LEARNING DISABILITIES, speech impairments, MENTAL RETARDATION and EMOTIONAL DISTURBANCES. About 45% of handicapped children—by far the largest portion—fall into the broad and sometimes vaguely defined area of the learning disabled, who require some form of special education and related services. In general, learning disabilities show up as an inability to understand or use spoken or written language—that is, to listen, read, write, spell or calculate. Learning-disabled children are not necessarily slow learners, and vice versa, but both may need special education, albeit in different forms. Evaluation procedures for learning disabilities have come under some criticism because of their subjective nature. In some schools, evaluators conclude that more than 50% of students are learning disabled. Critics who question evaluation methods contend that every child has some problem that can be elicited if an evaluator is obsessively determined to do so. Of the remaining categories of the handicapped, about 17% are speech-impaired—again, a vaguely defined disability,

which, depending on evaluator prejudices, can range from a true, physical speech impairment to a pronounced regional, ethnic or racial accent. About 9% to 10% of handicapped students are mentally retarded, and 7.5% are seriously emotionally disturbed. The deaf, hearing impaired, visually impaired, orthopedically disabled, multiply disordered and autistic each constitute about 1% of handicapped students enrolled in federally supported special education programs.

Until 1975, most handicapped children who were unable to cope with the normal classroom routine were denied admission to most public schools. Under pressure from parents and others seeking to extend the scope of civil rights laws, Congress passed the landmark EDUCATION FOR ALL HANDICAPPED CHILDREN ACT OF 1975. The law gave all handicapped individuals, aged 3 to 21, the right to the best possible education, free of charge, in the least restrictive environment, and it provided federal funds for public schools to provide such education. When the law was passed, only about 1.6 million of the 8 million handicapped children in the United States were attending public schools. Most of the rest were either incarcerated in residential facilities or languishing idly at home. In both cases, they rarely received adequate academic or compensatory education that contributed to their potential for eventual independence.

Television exposes of scandalous conditions at a score of institutions in the late 1960s and early 1970s, coupled with the spiraling costs of maintaining such ineffective residential facilities, provoked a public clamor for "deinstitutionalization" of all but the most severely handicapped and incorrigible children. Educators, who by then had developed a variety of new and effective educational techniques for formerly uneducable children, supported the deinstitutionalization movement, saying that isolating handicapped and delinquent children

was educationally counterproductive. Such children, they maintained, would fare better educationally if they were placed in the educational "mainstream" of conventional public schools and provided with special education and other services to supplement conventional education.

The result was the Education for All Handicapped Children Act, later renamed the INDIVIDUALS WITH DISABILITIES EDUCATION ACT (IDEA). It transferred the burden of educating the vast majority of mentally, physically and behaviorally handicapped children to public schools in the communities where the children lived. It guaranteed every handicapped child equal rights to education and full protection against discrimination of any kind. In addition to federal funding for special education, the law provided funding for all necessary construction to make school facilities "barrier free" and accessible to handicapped children and for any special transportation to bring children to and from school. Initially, the law was costly, however, with all taxpayers sharing the cost of special education for the handicapped and parents of handicapped children paying no more than any other taxpayers.

In the early 1990s, IDEA spending encompassed huge capital projects to make schools accessible or "BARRIER-FREE" for the handicapped. These costs ranged from \$20,000 to \$200,000 per school, depending on the age, size and layout of the school. Many of the costs of making schools barrier-free absorbed special education funds that might otherwise have gone to retraining the learning disabled. Moreover, costs began spiraling uncontrollably, as state and federal courts consistently expanded school responsibilities under the act to include more severely handicapped students such as autistic children and the deeply retarded in regular classrooms. Such court-ordered "full inclusion" was based on the theory that even the severely handicapped benefited more from conventional classrooms than from segregated,

special education classrooms. By “demystifying disabilities,” schools also taught tolerance to nondisabled students.

But the expanding, court-imposed doctrine of full inclusion so impeded teacher ability to pursue normal teaching activities and so interfered with the education of nondisabled students that the American Federation of Teachers, the powerful teachers’ union, called for a halt to the policy. One by one, state legislatures began setting limits to full inclusion—not just to avoid adverse effects on the quality of education of the nonhandicapped, but also to ensure that mainstreaming did indeed have beneficial effects for those handicapped children included in such programs. Ironically, there was considerable evidence that mainstreaming had harmful effects on some handicapped children. While almost all the mainstreamed disabled made more friends and fitted better into groups, the longer they spent in regular classrooms, the more likely they were to fail. Indeed, more than 60% of learning-disabled high school students failed at least one class when placed in regular education classes, compared to only 14% of those who remained in special education classes.

Regardless of the degree of inclusion of the handicapped in mainstream educational programs, almost all public schools are legally bound to follow certain common, basic procedures for dealing with handicapped children. The first of these is evaluation by psychologists and other experts who test and assess students to determine whether there is indeed a handicap or simply a temporary developmental problem. Evaluations that outline the parameters of handicaps are followed by conferences with parents to describe the findings and implications thereof, to discuss the appropriateness of special education and, if required, to provide a written INDIVIDUAL EDUCATION PROGRAM (IEP) for each student.

IEPs detail the student’s current level of achievement, the potential level of achieve-

ment and the services the school will provide to achieve that potential. Parents have the right to refuse an IEP, and the school must follow due-process legal procedures and obtain state permission to override such objections. Normally, parents must give written permission for implementation of an IEP. The school must write a new IEP at least once every three years, and parents are entitled to meet with school representatives at least once a year to review the child’s progress. At any time, parents are entitled to appeal all aspects of their child’s IEP, and the school is then obligated to obtain new, independent evaluations. Parental objections can include appeals to the U.S. Department of Education and even the U.S. Supreme Court. IEPs may include the services of a nurse, psychologist, physical therapist, speech therapist, audiologist or counselor—all at school expense. As much as possible, the curriculum of special education students should be equivalent to the regular educational curriculum, and handicapped children should participate in regular classes as much as possible.

IEPs also include extracurricular services, such as specially outfitted vehicles for transportation to and from school, construction of special facilities such as elevators and ramps for students of limited physical mobility and audible and visual signals and braille signs for students with auditory or visual impairments. Schools must also eliminate all physical or other barriers on school premises that might interfere with a child’s participation in regular education or a handicapped teacher or staffer’s access to the school facilities. Federal law prohibits the construction of a separate facility for the handicapped to avoid the cost of retrofitting existing school facilities.

(See also MAINSTREAMING.)

hands-on lessons A teaching method in which the student is an active rather than passive participant. Cognitive psychologists con-

tend that children learn and retain more when they are active agents, using real-life experiences to create and understand knowledge. JOHN DEWEY was the first educator to introduce active learning into the teaching process at his Laboratory School at the UNIVERSITY OF CHICAGO. Children at the Laboratory School learned to measure and calculate by actively engaging in such entertaining activities as cooking, carpentry and construction projects. The hands-on lessons of active learning contrast with passive learning, characteristic of college and graduate school lecture halls, where teachers impart information that students record passively.

(See also COGNITION.)

handwriting The skill of writing letters, words and sentences. Usually taught in kindergarten through second or third grade, two forms of handwriting are taught in most schools: manuscript writing, with each letter printed separately, and cursive writing, with the letters of each word connected to each other in a flowing, sustained writing motion. Beginning in kindergarten, students learn to use manuscript writing first, with cursive taught in second or third grade, during four to six weeks of special instruction. Handwriting was better known as penmanship before World War II, when classroom desks were equipped with inkwells and children learned to write with stub pens.

Harlem Youth Opportunities Unlimited (HARYOU) An organization founded in 1962 by KENNETH CLARK, the African-American psychologist and educational reformer, to provide compensatory instruction for impoverished ghetto children who were falling behind in basic school subjects. HARYOU also provided job opportunities for unemployed black youth. HARYOU was less successful in fulfilling one of Clark's other treasured goals—integration of New York City schools by busing

black children outside their neighborhoods and drawing children from all over the city to each school. Parents of both races opposed the program. White parents opposed sending their children to inferior schools in black ghettos, while black parents opposed forcing their children to travel an hour or more to and from outlying white neighborhood schools.

HARYOU was eventually absorbed in President Lyndon B. Johnson's WAR ON POVERTY, and Clark described his conclusions from his work at HARYOU in a powerful book, *Dark Ghetto* (1965). In it, he explained the social dynamics, psychology, pathology and power structure of the ghetto and ghetto schools. "Nothing anywhere in the training of social scientists, teachers or social workers," he concluded, "now prepares them to understand, to cope with, or to change the normal chaos of ghetto communities."

Harper, William Rainey (1856–1906) Scholar, linguist, educator and founding president of the UNIVERSITY OF CHICAGO. Born and educated in Ohio, he earned a B.A. at 14 and Ph.D. (at Yale) in Indo-Iranian and Semitic languages just before his 19th birthday. By then, Hebrew had become a passion, and, after teaching at several small colleges, he accepted a professorship of Hebrew at the Baptist Theological Seminary in Chicago, Illinois, in 1880. In 1886, he was appointed professor of Semitic languages at Yale, where he also developed a deep interest in adult education and became principal of the Chautauqua Institution's college of liberal arts (see CHAUTAUQUA LITERARY AND SCIENTIFIC CIRCLE), a nationwide correspondence school supplemented by a Sunday lecture series and summer-camp courses for adults.

He held both posts until 1891, when he and John D. Rockefeller formulated plans to build a great university in the west—a "Harvard" of the west. Backed by a \$35 million Rockefeller gift, Harper set out to create one of

the world's most diversified institutions of higher learning. His vision of the university, generally, and of the University of Chicago, specifically, seemed limitless. First, he gathered together a brilliant faculty of divergent views, guaranteeing them complete academic freedom to teach what they wanted, how they wanted. Then, he broadened the reach of his faculty by arranging cooperative affiliations with four existing liberal arts institutions: Des Moines College, Kalamazoo College, John B. Stetson University and Butler College. He also established ties with Bradley (Polytechnic) Institute and Rush Medical College.

Harper was looking to expand in other directions when the great liberal educator Col. FRANCIS W. PARKER approached him about merging his own newly created Chicago Institute, an outstanding teacher training school (with an attached elementary school), into the university. JOHN DEWEY had already established an undergraduate department of education at the University of Chicago, making it the first university with such a department. Harper decided to accept Parker's offer and create a graduate school of education. He took over three schools—the Chicago Manual Training School, a college preparatory school called the South Side Academy and the University Elementary School, which Dewey and his wife had founded—and merged them with Parker's institute to form the University of Chicago School of Education, the first such graduate school in the United States. He named Parker as its first director.

Harper also tried to extend the university's reach into arts education and social service training by absorbing the Chicago Art Institute, the Field Columbian Museum and JANE ADDAMS'S HULL-HOUSE. After temporary affiliations, both museums severed their ties because of disputes over control of the awarding of degrees. Addams, on the other hand, refused to cede any control over her institution, and Harper decided to establish his own University

of Chicago settlement as a site for social service research. A prolific writer in his beloved sphere of the Hebrew language, Harper extended the university's education reach still further with the creation of the University of Chicago Press, which became America's leading publisher of scholarly works and learned journals at the beginning of the 20th century.

Not content with educating scholars, Harper insisted on opening the university's educational program to all citizens. In the tradition of the Chautauqua Institution, he talked of the university as the "keeper" and "high priest" of democracy, with an obligation in a democratic society to teach truths to the widest possible audience. Using experiments in adult education in England as models, Harper organized a huge, autonomous, degree-granting extension division, with its own department for specialized teacher training in extension education. The program provided education to thousands throughout the Chicago area and, through correspondence courses, across the Midwest. It eventually served as a model for similar programs at the University of Wisconsin, the University of Kansas and comparable institutions, which for the first time began serving the educational needs of the general public as well as their own in-house scholars.

The diversity of activities he brought to the University of Chicago made it the target of ridicule by conservative educators who called it "Harper's Bazaar," but it also lured hundreds of administrators from other universities to study which elements they might incorporate into their own expanding institutions. Harper's ideas for innovative higher education were endless. He divided the academic year into four quarters, with the summer quarter an integral part of the school year. He expanded graduate studies into new academic areas and pressed his faculty to expand research, all the while continuing to serve as professor of Hebrew and assuming the editorship of *The Biblical World*,

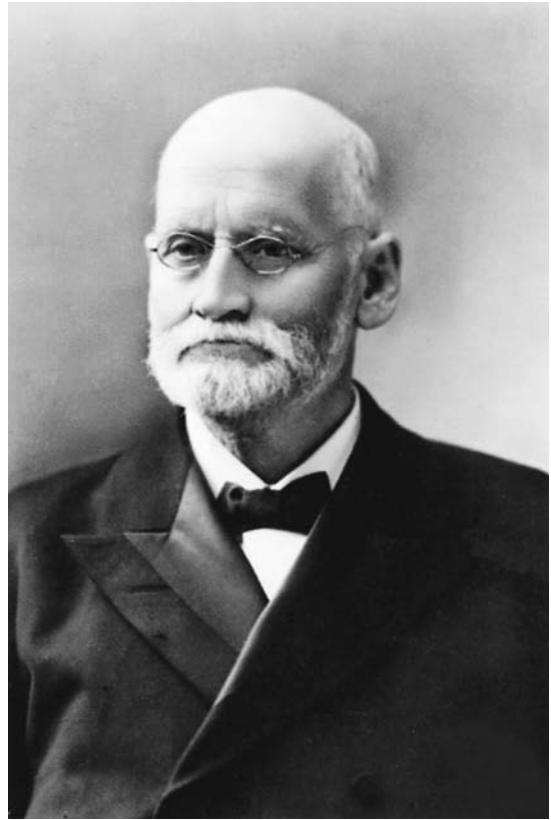
The American Journal of Theology, and *The American Journal of Semitic Languages and Literature*. He was also a member of the committee that selected and arranged the editing of the series the Great Books but died of cancer at 49 before he could achieve all his remaining goals.

Harris, William Torrey (1835–1909)

Teacher, philosopher and, above all, developer and disseminator of a new, “American” philosophy of education that helped Americans embrace universal public education as essential to their survival as a free people. Born in Connecticut, he was educated at the famed Phillips Academy at Andover, Massachusetts, but then resigned from Yale University after less than three years, saying he was disappointed and disillusioned by an elitist education that seemed to offer no grander ideal for the individual and the nation. In 1857, he abandoned his ties to the past and, like many young men of his day, moved westward, eventually settling in St. Louis, Missouri, where in 1858 he became an assistant teacher in the public school system.

At the time, St. Louis was a booming, “northern” city in a “southern” slave state—a city that remained fiercely loyal to the Union because of an industrial economy that thrived as a supplier to federal armies in the West. After working his way up through the system as teacher, school principal and assistant superintendent of schools, Harris was appointed superintendent of St. Louis schools in 1867. By then, the city’s economic success had produced a vision of its becoming the future “Capital of the Nation” and “Future Great City of the World.” Helping to encourage these visions was the St. Louis Philosophical Society, which Harris founded in 1868, along with the *Journal of Speculative Philosophy*, the first American periodical devoted entirely to philosophy and one that influenced educators across the United States.

Harris was strongly influenced by the philosophy of Georg Friedrich Wilhelm Hegel (1770–1831), who had proclaimed America to



William Torrey Harris (Library of Congress)

be the land of the future, even proclaiming it as “God’s Chosen Nation.” Harris saw the reunification of North and South, along with competing ethnic, religious and political interests, as the vehicle for establishing a prosperous, smoothly functioning society of the kind Hegel had envisioned. Education, Harris believed, would form the basis of such reunification and national growth. Harris saw education as emanating from five basic institutions: family, during the first five or six years of life; schooling, during the next eight to 10 years, as the child became curious about the world outside the family; civil society, to encourage the young person in the vocational pursuits; the state, to

educate the citizenry about and enforce the laws; and the church, to provide spiritual education.

Families, churches and civic institutions trained over the years, he said, by offering continual education that individuals absorbed unconsciously. Schools, on the other hand, instructed by using the printed and spoken word to encourage ACTIVE LEARNING by the individual. Harris believed that development of active learning—as opposed to the passive learning of earlier education—lay at the heart of democracy and enlightened self-government. He also believed that the school should be the “great instrumentality to lift all classes of people into a participation in civilized life.” A firm believer in universal public education, he called on educators to open schools to all young people, including women, and to provide them with a general, cultural, humanistic education that would train the character and intellect of young people instead of preparing them to be obedient workers. However, he was less enthusiastic about the education of emancipated blacks, although he believed they deserved “separate but equal” schools that would combine intellectual and industrial education.

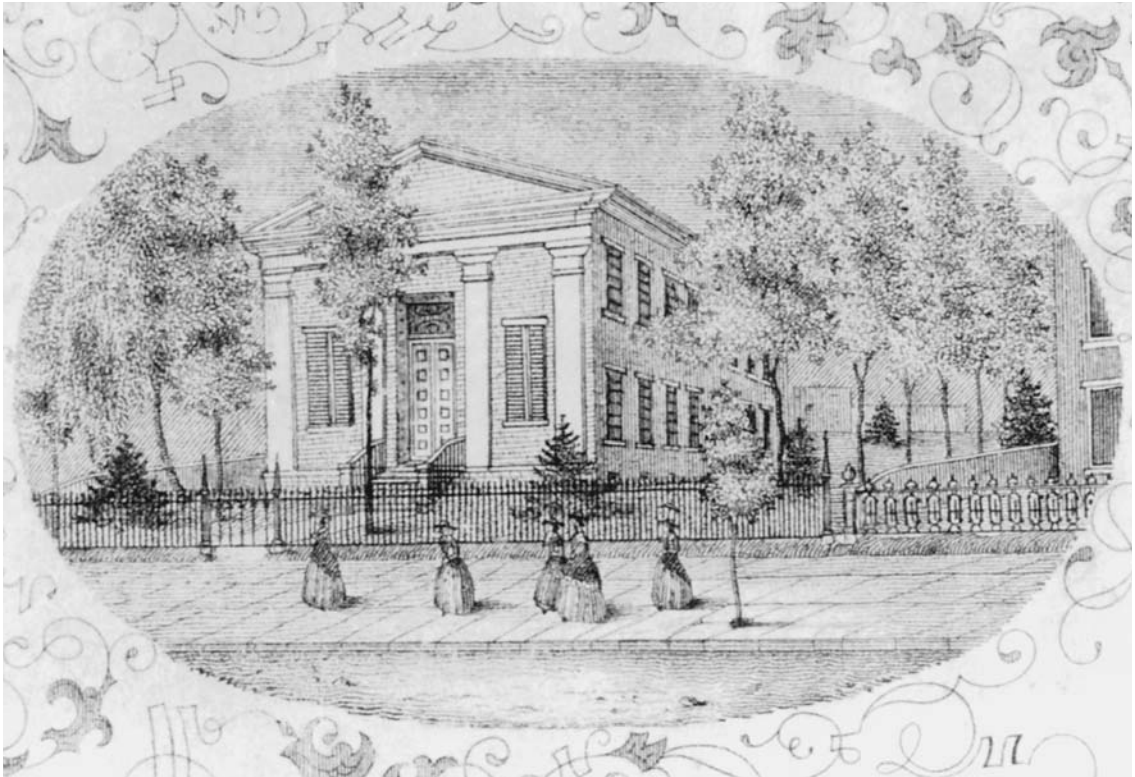
Harris called for wholesale changes in traditional curricula and methods of instruction to permit development of active learning. To that end, he revolutionized the curriculum of St. Louis public schools and convinced thousands of educators across the United States to do the same. He introduced new subjects, such as art, music, science and manual arts to the St. Louis public school curriculum. He also added the KINDERGARTEN, an innovation at the time, to all elementary schools, to permit children to learn actively by participating in play and games. He expanded high school education, which had been reserved for college-bound students only, to permit study by all who could afford the time off from work.

Harris based his curriculum on what he called the “five great divisions” of the life of

man: arithmetic and geography, related to man’s comprehension and conquest over nature, and history, language and literature, related to the comprehension of human life. From this philosophical basis, he created five coordinate groups of study for the curriculum: mathematics and physics; biology, including botany; literature and art; grammar and the scientific study of language, leading to logic and psychology; and history, including sociology and politics. He believed that students should study each of these coordinate groups at every level of schooling, from kindergarten through college, by topics appropriate to the age and previous training of the students. In effect, his curriculum was designed to promulgate a philosophy of universal public education, which he hoped would create a truly democratic community in the expanding urban, industrial nation of his day. His greatest achievement as an educator was less in introducing that philosophy in his own community, than in convincing his generation of educators that a philosophy of education was applicable universally, to every American child.

After serving as superintendent of schools for 13 years, Harris left St. Louis in 1880 to join RALPH WALDO EMERSON and BRONSON ALCOTT in an unsuccessful effort to establish the Concord School of Philosophy in Massachusetts. In 1889, he was appointed U.S. Commissioner of Education, a post he held until 1906 and that he used to convince educators and enlightened Americans that universal public education was the single most effective means of solving the nation’s social, political and technological problems.

Hartford Female Seminary One of the first American schools to offer advanced educational opportunities to women. Opened in 1823 by CATHERINE BEECHER, the Hartford school taught grammar, geography, rhetoric, philosophy, chemistry, ancient and modern history, arithmetic, algebra, geometry, moral



The only remaining rendering of Catherine Beecher's Hartford Female Seminary, taken from an old diploma (*Stowe-Day Foundation*)

philosophy, natural theology and Latin—all subjects previously reserved for men. In her autobiography, Beecher later recalled that the idea of teaching such subjects to women “surprised and almost dismayed” Hartford’s “leading gentlemen.”

Although other female seminaries existed, they concentrated on teaching girls the domestic and ornamental arts in programs designed to prepare students for marriage, motherhood and household obligations. Only EMMA WIL-LARD had dared teach women other subjects, when she opened her Middlebury Female Seminary in Vermont in 1807. The Hartford Female Seminary did not ignore the domestic and

ornamental arts, but it also prepared its students for professional work as teachers. Indeed, the school turned out the first generation of women teachers in the United States and, in effect, became the nation’s first teacher training school.

Harvard, John (1607–1638) English-born philanthropist and, perhaps, minister, whose bequest ensured the survival of what was later renamed HARVARD COLLEGE. Born of a wealthy London family, Harvard graduated from Emanuel College at the University of Cambridge in 1632 and earned his master’s degree three years later, by which time he had



There being no likeness of John Harvard, the famed statue at Harvard Yard is actually a likeness of an early 20th-century Harvard student. (*Library of Congress*)

inherited a large estate. In 1637, he sailed to America and settled in Charlestown, in the Massachusetts Bay Colony, where he became a teaching elder in the church. He died a year later of consumption and left half his estate, about £780, along with his library of 400 volumes (representing 329 titles) in the classics and theology, to the struggling new college, which had started instruction the previous summer. The following March, the General Court ordered “that the college agreed upon formerly to be built at Cambridge shall be called Harvard College.” Although a statue of John Harvard sits prominently in Harvard Yard, there were no surviving images of the man, and the handsome young face contem-

plating the shady walks of the campus today is that of a Harvard student at the beginning of the 20th century (see illustration under Harvard College.)

Harvard College America’s first and oldest college, founded in 1636 as a school of theology and now a premier four-year college of liberal arts and sciences at Harvard University with more than 11,000 students. The founding of Harvard was unquestionably one of the most remarkable and uncharacteristic achievements in the history of the American colonies, coming as it did less than two decades after the arrival of the first settlers. “After God had carried us safe to New England and we had builded our houses, provided necessaries for our livelihood, reared convenient places for God’s worship, and settled the civil government: one of the next things we longed for, and looked after was to advance learning and perpetuate it to posterity,” according to the account of the settlers as written in *New England’s First Fruits*, published in 1643 by unknown authors identified only by the initials “R.O.” and “G.D.” and cited in Morison’s *The Founding of Harvard College* (1935). Accordingly, on October 28, 1636, the General Court, or legislature, of the Massachusetts Bay Colony appropriated £400 to build a college at Newtowne, whose name was later changed to Cambridge, at the behest of the large number of colonist leaders who had attended Cambridge University in England.

That the founding of a college should have been so high a priority for a group of settlers so hard-pressed by the exigencies of life in the wilderness probably reflects the high level of education of the colonial leaders. At least 100 had studied at Cambridge and 32 at Oxford. Of these, almost all were part-time farmers by necessity, but three also practiced medicine, 15 taught, 27 were public officials and 98 served in the ministry, which also entailed instructing the young and training clerical aspirants to the

clergy. The founding of a theologically oriented college to advance piety, civility and learning was a natural outgrowth of the need to build a strong, literate clergy to succeed the original clerics in the New World.

Harvard acquired its name after the death in September 1638 of the Reverend Mr. John Harvard, who bequeathed half his estate to the college, along with his library of 400 volumes. Instruction had just begun that summer, and in March of the following year the General Court ordered that it be given its benefactor's name. Unfortunately, the college closed the following September because of the vicious behavior of its first president, NATHANIAL EATON, a brutal teacher "fitter to have been an officer in the Inquisition or master of correction, than an instructor of youth." The college did not reopen until a year later, on August 27, 1640, when HENRY DUNSTER, an alumnus of Magdalene College, Cambridge, was appointed president, and the history of Harvard College as a continuously operating institution began. By the time Dunster resigned 14 years later, he had graduated 74 alumni, obtained a charter from the General Court, expanded the library to more than 1,000 volumes and was responsible for completing construction of the original, turreted "Old College" and two additional buildings—a second college building and a president's lodging, which also housed the college printing press.

Little is known about Dunster's background except his birth in Lancashire in 1609 and his graduation from Magdalene College with an M.A. degree in 1634. After serving as teacher and curate in his home town of Bury for six years, he immigrated to Boston and was elected president of Harvard three months after his arrival. He not only designed the first three-year curriculum, he also taught it all during the first year, lecturing to each class for an hour each morning, Mondays through Thursdays, and meeting for an additional hour with each

class every afternoon for disputations, recitations and tutorials. Dunster met with the entire student body on Fridays and Saturdays for work in rhetoric and divinity. The table on page 508 shows the Harvard College curriculum of 1642, its third year of existence.

Admission to Harvard required fluency in Latin, an elementary knowledge of Greek grammar, an understanding of Cicero, a pledge to read Scripture twice a day, and a recognition that the main goal of each student's studies and, indeed, life was "to know God and Jesus Christ. . . ." Class attendance was mandatory, as was strict obedience of all college rules and regulations, including a ban on the use of profanity, association with "dissolute company" and any travel outside the community without the consent of one's tutors, parents or guardians.

Instruction was based on the lecture, the declamation and the disputation, with Dunster providing the lecture as an oral textbook and the declamation as a rhetorical demonstration of knowledge and varying points of view, based on a broad range of quotations from the classics. Students then engaged in disputations or formal debates (see *DEBATING SOCIETIES*), in which they drew upon their accumulated knowledge to argue for or against any important issue. During Dunster's administration, Harvard was not dissimilar to colleges at Oxford and Cambridge. It housed 20 to 50 students in a collegial atmosphere presided over by the president and two or three tutors and served by a steward, cook, butler and several servants. Student median age varied from 15 to 17, and, while the first students were New England Puritans, the student body quickly became far more cosmopolitan, with the arrival of students from Virginia, New Netherland, Bermuda and England. As in England, most students were sons of magistrates, professionals or landed gentry.

Dunster resigned in 1654 after a dispute with students, the board of overseers and the

		8 A.M.	9 A.M.	10 A.M.	1 P.M.	2 P.M.	3 P.M.	4 P.M.
First Year								
Monday and Tuesday	Logic			Physics	Disputations			
Wednesday	Greek etymology and syntax				Greek grammar, from literature			
Thursday	Hebrew grammar				Hebrew Bible readings			
Friday	Rhetoric	Declamations		Rhetoric	Rhetoric			
Saturday	Catechetical divinity	Commonplaces [philosophy]				History; nature of plants		
Second Year								
Monday and Tuesday		Ethics					Disputations	
Wednesday		Greek prosody and dialects				Greek poetry		
Thursday		Chaldee [Chaldean] grammar					Practice in Chaldee; Ezra and Daniel	
Friday	Rhetoric	Declamations		Rhetoric		Rhetoric		
Saturday	Catechetical divinity	Commonplaces				History; nature of plants		
Third Year								
Monday and Tuesday		Arithmetic; geometry; astronomy					Disputations	
Wednesday	Theory of Greek [style]				Exercise in Greek style, in prose and verse			
Thursday					Syriac grammar		Practice in Syriac; New Testament	
Friday	Rhetoric	Declamations		Rhetoric	Rhetoric			
Saturday	Cathetical divinity	Commonplaces			History; nature of plants			

General Court over the addition of a fourth year to the curriculum and the issue of infant baptism, which Dunster claimed had no scriptural basis. His declaration was deemed heresy. He was succeeded by Charles Chauncy, another Cambridge alumnus, from 1654 to 1672. Then followed a succession of four Harvard gradu-

ates, including INCREASE MATHER, who headed the college from 1685 to 1701.

Although Harvard's original purpose was to train a literate clergy to lead the colonies, many students attended solely to obtain an education the prestige of which would enhance their careers in the secular world. Of the nearly

400 students who had attended Harvard by the end of the 17th century, 180 were indeed clergymen, but 42 had become public servants and 27 had become physicians, while the college produced 13 teachers, 11 planters and gentlemen, 10 merchants and five soldiers and mariners. Nearly 70 failed to graduate and 27 died young. Although students paid for the privilege of attending Harvard, more than 50% of its support came from the government, and the result of that investment was the imposition of

unorthodox social and cultural obligations such as the education of Indians. In 1654 or 1655, Harvard's second president, Charles Chauncy, reluctantly agreed to build the two-story Indian College to educate a half-dozen promising young Indians, who, the government assumed, aspired to the same social and cultural goals as whites. Only about four students ever attended, and only one, Caleb Cheeshahteumuck, actually completed the work for the B.A. He died a year later, however,



Engraving of original buildings at Harvard College, the first college built in colonial America, in 1636 (*Library of Congress*)

and the Indian College became a housing facility for white students.

Like all educational institutions, Harvard responded to the 18th-century Age of Enlightenment and its rain of scientific discoveries and new political and social philosophies with a vast expansion of its curriculum, particularly in the sciences and in the study of secular philosophies. Although its chief rival, Yale, was the great innovator in higher education in the first part of the 19th century, the appointment in 1869 of 36-year-old CHARLES ELIOT as Harvard president signaled the return of the nation's first college to its position as the nation's premier college. Often called the "founder of Harvard University," Eliot came to Harvard when it was a small, provincial college with a curriculum that had changed little over the previous century and a faculty split by dissent between traditionalists, who wanted to maintain the curricular status quo, and modernists, who wanted a more practical curriculum.

At the time, Latin, Greek, mathematics, philosophy, history, physics, chemistry, French and German remained Harvard's core subjects. Its law school granted an LL.B. to any student who completed its 18-month course of study; no examinations were required. Its medical school granted an M.D. to all students who completed two terms of study, served an apprenticeship with a practicing physician and passed 10-minute oral exams in five of nine principal subjects. Harvard also had a scientific school that admitted and graduated all who applied and a Unitarian divinity school that granted no formal degree.

Eliot acted swiftly and dramatically to modernize the college. He introduced written examinations as a prerequisite for admission, with students selected on the basis of intellectual promise and strength of character. He broadened the undergraduate liberal arts curriculum and merged the scientific school into

the undergraduate college. In 1872, he established a Graduate Department (later, the Graduate School of Arts), which granted master's degrees and doctorates. The law, medical and divinity schools were reorganized as proper graduate schools, with sequential curricula requiring extensive written examinations. He gave students the right to take elective courses and in 1879, approved limited faculty instruction of women and the eventual founding of the Society for the Collegiate Instruction of Women. Better known as the "Harvard Annex," it became Radcliffe College in 1894 and a century later was absorbed into Harvard after the latter became coeducational. He also raised faculty salaries to levels competitive with private industry and recruited and lured the foremost national and international scholars to teach at Harvard full-time.

Within 25 years, Eliot had created the model of the modern American university and made Harvard the most widely acclaimed institution of higher learning in the United States and, in the opinion of many, in the world. It taught all the world's great languages, literature, history, all the social sciences, and the range of human knowledge about nature and science. It had hired the finest scholars in the world to impart that knowledge to carefully screened young men who, in the college president's opinion, would benefit most from the experience. Harvard University became a center of research and developer of new knowledge as well as a repository of existing knowledge. With 10 graduate schools, including preeminent schools of medicine, law, business and education, it has continued to exert a broad influence on education and on the nation, by graduating more than its share of national leaders in virtually every sector of American life. Harvard's endowment in 2005—more than \$25 billion—was the largest of any college or university in the world.

Haskell Indian Junior College A two-year college for Indians, founded in 1884 in Lawrence, Kansas, in fulfillment of the federal government's treaty obligations to the Indian people. One of the oldest colleges of its kind and one of the few federally supported colleges, Haskell is operated by the BUREAU OF INDIAN AFFAIRS and is limited to students who can certify their Indian ancestry, with preference given to students who are at least one-fourth Indian. Almost evenly divided between men and women, the student body draws between 800 and more than 1,000 Indians from more than 100 tribes in more than 30 states and territories. Once free, the college continues to hold costs of tuition, room and board at affordable, token levels.

Hatch Experiment Station Act of 1887 A federal law appropriating funds to improve agricultural research at LAND-GRANT COLLEGES. Established as state colleges with funds realized from the sale of surplus federal lands, the land-grant colleges had already established extensive departments of education, but their research efforts had failed to stem the growing deterioration of once-rich farmlands from overplanting and years of persistent dust storms. Not to be confused with a later, similarly named law limiting political activities of federal employees, the Hatch Act of 1887 simply provided \$15,000 in federal funds each year for research and experiments at land-grant college agricultural experiment stations. For the most part, these amounted to model farms, worked by land-grant college agricultural students under the direction of their professors. To prevent academic theoreticians from deterring such stations from achieving any practical results, the Hatch Act specified that the funds were to be used for research and experiments that might have economic benefits for American agriculture.

Hawaii The 50th state admitted to the Union, in 1959. A 1,500-mile-long chain of islands, the state has one of the poorest public education systems in the United States. In 1999 its schools ranked in the lowest quintile of American state school systems in terms of student achievement scores in mathematics and verbal skills, spending per pupil, pupil-teacher ratios, teacher quality and school spending as a percentage of total government spending.

American missionaries brought the first formal schooling to Hawaii in 1820, when it was still an independent nation. King Kamehameha is said to have established the first public schools in 1840, but Princess Bernice Pauahi Bishop established Hawaii's most celebrated school in 1884, when she set aside 434,000 acres in a perpetual trust for the education of native Hawaiian children. With a current value of more than \$8 billion—more than the combined endowments of Yale and Harvard universities in 1990—the estate supports a free school for 3,200 children, from kindergarten through twelfth grade. Stressing Hawaiian culture, the school also supports related community programs, including preschool programs, reading tutorials and adult education classes.

Hawaii was originally known to the West as the Sandwich Islands, in honor of the fourth earl of Sandwich, patron of the English explorer Capt. James Cook, who landed on Kauai in 1778. Within a decade, Westerners of all nationalities had settled on the idyllic beaches, bringing with them Western diseases and alcohol that decimated the native population. A native king, Kamehameha, united the eight main islands into a kingdom whose aim was to perpetuate native rule. But as the number of American missionary families increased and their sons acquired large landholdings, control of the islands fell into the hands of Americans, who convinced Washington to seize the islands on July 4, 1893, and create the Republic of

Hawaii. Sanford B. Dole, the builder of the great pineapple plantation, was named its first president. In 1898 the United States ceased its charade and annexed the islands.

About 24% of the island group's population of 1.26 million were under 17 in 2005, and 74% were minority students, with 42% of Asian ancestry. About 12.5% of elementary and secondary school students lived in poverty. Some 15% attended private schools rather than the state's 260 public schools, which rank 47th in the nation. Academic proficiency of high school students is the lowest in the United States except for students in the District of Columbia. Elementary school students score only slightly higher—about eighth lowest in reading and sixth lowest in math. The state has three public and eight private four-year colleges and seven public and two private two-year colleges. The University of Hawaii, a public LAND-GRANT COLLEGE founded in 1907, has 10 campuses, with a total of about 45,000 students and 3,100 faculty. Its two four-year campuses at Hilo and Honolulu (Manoa), the latter its major installation, have nearly 13,000 undergraduates and almost 6,000 graduate students. The state's colleges have a graduation rate of only about 46%.

In 2004, one of the many financial scandals racking American colleges and universities engulfed the 10-campus University of Hawaii, when the Board of Regents dismissed its president "for cause." In addition to inappropriate public conduct and political activism, the regents charged the president with "questionable, even abusive, expenditures" on travel and other personal outlays and inappropriate spending from a discretionary fund.

Hawley, Gideon (1785–1870) The first superintendent of common schools in New York State; usually referred to as the "father" of the state's public elementary school system. Born in Connecticut and by 1812 a successful

practicing lawyer in Albany, New York, his work as both a lawyer and a tutor at Union College brought him to the attention of leading proponents of public education among the lawmakers at the state legislature. It was in 1812 that the legislature created the first state educational office, and in 1813 it named Hawley the first superintendent of common schools "to digest and prepare plans for the improvement and management of the common school fund, and for the better organization of common schools."

For the next eight years, Hawley laid the foundation for the public elementary school system in New York State, organizing schools and creating public interest in public education. Although his office was abolished by legislators demanding more local and less state control of local schools, he left behind him a thriving, if fledgling, network of public schools that, with the help of famed educator EMMA WILLARD, expanded into the largest in the United States by the time of his death. In 1814, Hawley was named secretary of the board of regents of the University of the State of New York, a post he held until 1841, when he was named a permanent member of the board. Two years later, again with Willard's help, he was able to establish the first teacher training, or "normal," school in New York State, at Albany.

Hazelwood School District v. Kuhlmeier A 1988 U.S. Supreme Court decision that gave a Missouri high school principal the right to delete from the student newspaper student articles he deemed inappropriate. The case proved another in a continuing series of confusing and constantly shifting decisions over FIRST AMENDMENT free-speech rights of minors—in this case, the rights of students who wrote and edited the school newspaper as part of a journalism class. Because the newspaper was school owned and operated and used as a pedagogical tool, the Court found that the principal (and, by infer-

ence, other educators) did not violate student free-speech or free-press rights by controlling style and content of student expression. Such controls were deemed an effort to teach students better techniques of writing and evaluation, much as style and content are teacher-directed in literature or history essays.

The Court distinguished between the Hazelwood School District and the 1969 case of *Tinker v. Des Moines Independent School District*, in which it ruled that students had the right to wear antiwar armbands in school. Pointing out that the "Constitution does not stop at the public school doors," the Court nevertheless left educational authorities with the right to curtail student free speech when it "materially and substantially" disrupted the educational process. Neither case clarified the issue for colleges, where students have not only reached the age of majority, but also often operate school newspapers independently.

hazing An American schoolboy initiation rite dating back to about 1850 and characterized by various pranks on initiates that can range from mockery and humiliation to sadistic physical distress or injury. A traditional part of college FRATERNITY and SORORITY initiations, hazing gradually spread into athletics during the 20th century as part of the "welcoming" ceremony for newcomers to college teams. Akin to adolescent rites of passage into adulthood in traditional societies, hazing in the United States spread to high school athletics in the 1970s and 1980s. Ironically, just as rates of random criminal violence by juveniles were declining during the 1990s (see JUVENILE DELINQUENCY), hazing rites changed from adolescent foolery to increasingly dangerous bullying and brutality, with some high school initiates to school teams suffering beatings and sexual assaults. About half the high school students in American report having been subjected to hazing, according to a survey conducted by Alfred

University, in New York, in April 2000. Defined as "any humiliating or dangerous activity . . . to join a group regardless of your willingness to participate," hazing included drinking contests, stealing, inflicting pain on themselves, physical abuse, dunking someone's head in a toilet, being yelled or cursed at, eating or drinking disgusting substances and piercing or shaving one's body. In the most surprising finding, about one-fourth of the high school respondents had faced hazing when joining church youth groups. In other categories, 76% reported hazing as a requirement for joining fraternities or sororities, 35% reported hazing for joining athletic teams and 34% for joining cheerleading squads. At the college level, several students died from alcohol poisoning as part of fraternity hazing that required initiates to consume entire bottles of undiluted spirits. As rates of injuries increased, parents across the United States began suing school and college officials, and many schools and colleges responded by banning hazing and, in a number of cases, calling police to arrest students who had injured younger students by hazing.

headmaster/headmistress A title equivalent to principal in nonsectarian private schools; now replaced by the gender-neutral term *head*. Most commonly used in England, the name derives from degrees awarded in the earliest medieval universities in Europe, to differentiate between student novitiates, bachelors or licentiates, and masters who were certified to teach. Many private, nonsectarian schools in the United States and schools and colleges throughout the English-speaking world continue to call male teachers masters and the head teacher or principal the headmaster.

Women did not make their appearance in American teaching until the early 19th century, when almost all "COMMON SCHOOLS," or local elementary schools, were taught exclusively by men. The first female teachers usually headed

their own small, private academies or seminaries for girls where they served as the sole teacher and as the headmistress. As women took over common, or public, elementary school teaching from men during the Civil War, they were simply called teachers, but never assumed the formal female equivalent of master because none had equivalent degrees.

Head Start A comprehensive, federally sponsored program to improve academic achievement of economically disadvantaged children by giving them the same PRESCHOOL learning opportunities available to the economically advantaged. Created as part of the ECONOMIC OPPORTUNITY ACT OF 1964, Head Start translated into formal legislation the American belief that education (not birth) was the key to individual success and that, without equal educational opportunities, the poor would never obtain equal economic opportunities.

Better known as the WAR ON POVERTY, the Economic Opportunity Act provided a wide range of other help for the poor such as legal assistance, health care and economic opportunity loans. At the heart of the program was federal sponsorship of community action programs in which the poor themselves, along with supportive institutions such as local churches, settlement houses and other volunteer groups, attacked poverty. Of all such programs—and there were many—the one that caught the imagination of poor and rich alike, professionals as well as nonprofessionals, was Head Start. After the Office of Economic Opportunity was dissolved, Head Start not only survived but also expanded with bipartisan support. It was eventually incorporated into the Department of Health and Human Services, which allocates more than \$5.6 billion a year for the program.

For years, leading educational psychologists such as BENJAMIN BLOOM of the University of Chicago had claimed that the first few years of life were the “critical period” in human

development and that intervention in those early, preschool years was vital to intellectual development. Intervention through remedial and special education during the school years came too late, they claimed. Head Start gave them the opportunity to prove their theories by enriching the intellectual lives of poor children with the same strategies and activities that higher-achieving children from higher-income families received routinely. These included a variety of adult-to-child contacts, including reading to children, conversing with them, playing games with them, undertaking collaborative tasks with them and taking them on mutually enjoyable outings to entertaining and culturally enriching events.

Head Start, whose name has varied over the years from Operation Headstart to Project Head Start, has proved one of the most successful government-sponsored educative programs in American history. After enrolling about 500,000 in its first summer of 1965, the program expanded by between 200,000 to 300,000 children a year, offering mental and physical health care, child welfare, recreation facilities, remedial services and intellectual development. In addition to professional workers, Head Start involved parents in planning and also in serving as paraprofessionals and volunteers. Over the next three decades, Head Start mushroomed into a multibillion-dollar-a-year program, with 1,400 units in poor areas across the United States supporting half the nearly two million eligible children. By 2005, it had grown into America’s largest provider of health care services to poor children and had enabled about 20 million poor children to enter school better prepared than their economic peers. Of the more than 800,000 children enrolled in Head Start, 6% are five years old or older; 60% are four years old; 30% are three years old and 4% are under three years old. About 13% fall into the broad category of handicapped children. About 36% of Head Start enrollees are African

Americans; 28% are Hispanic; 31% are white; 4% are American Indian or Native Alaskans and 3% are Asian Americans.

Despite its recognized achievements, Head Start became a center of controversy over the years, with opponents questioning its overall success. Several studies purported to have “proved” that gains in intelligence scores and learning in preschool disappear after two years at school. One study found an unacceptably wide variability in the quality of Head Start programs, with only about half having a noticeably beneficial effect on their children, while about one-quarter were “marginal” and the other quarter were run so poorly that they had no beneficial effects. One study charged Head Start officials with “doctoring” records by claiming that 88% of enrolled children had been immunized, when evidence indicated that less than half that number had received complete immunizations. Opponents of Head Start in the U.S. House of Representatives also hurled accusations of “financial abuse, mismanagement, impropriety or outright theft” at some of the organization’s programs, citing indictments of Head Start operatives in Maryland and South Dakota. But officials of the National Head Start Association counter that financial abuse was rare in the organization and that reviews had found “serious problems in only fifteen percent of cases or fewer.”

Respected researchers subsequently found that every dollar spent on Head Start produced \$3 to more than \$7 in savings on the average expenditures for welfare, remedial education and criminal justice that are eventually spent on the average child emerging from a poor environment without the benefits of Head Start. One landmark study by the High Scope Educational Research Foundation, a nonprofit research organization in Michigan, collected some of the most convincing data in favor of Head Start and similar programs. Its continuing, 20-year study of groups of students who did or did not receive

preschool services before kindergarten found that those with preschool experience were far higher achievers in every respect. As they grew up, they scored higher academically than students with no preschool, had a higher percentage of high school graduates, needed less special education, produced fewer teenage pregnancies, obtained better paying jobs and had fewer encounters with law enforcement officials.

Proponents of Head Start do not deny the imperfections of the program, but they insist most can be remedied with more funding to make classes smaller and make pay scales competitive with those in public schools. Pay for public school teachers averages 60% higher than that of Head Start teachers. The result is that many teachers in Head Start have no bachelor’s degrees. Academic qualifications of Head Start teachers, however, has become a moot question, as more states establish preschool programs in public schools. As late as 2000, only 26 states offered such programs, but by 2005, spurred by the NO CHILD LEFT BEHIND ACT OF 2001, all but one state had opened public prekindergarten classes.

head teacher An archaic term referring to a full-time elementary school teacher who also served as school principal. Because elementary school teachers did not require master’s degrees, they seldom qualified to become HEADMASTERS, even when they assumed similar administrative duties. Head teachers are now called principals.

health education The formal classroom instruction of children, from kindergarten through high school, in matters concerning the care of their bodies, dietary and sleep needs, eating disorders, birth, death and dying, suicide, disease prevention, sexuality and sexually transmitted diseases, abortion, substance abuse (tobacco, alcohol, drugs, etc.), violence, gangs, cheating and lying, exercise and AIDS.

Required in more than 30 states as of 1995, health education remains a source of controversy in many school districts. Many parents contend that the role of schools should be limited to instruction in traditional academic subjects and that health education encourages children to experiment in practices they (the parents) deem objectionable. Those favoring health education insist that experimentation is a natural and inevitable aspect of maturation and that youngsters equipped with accurate knowledge are less likely to experiment in self-destructive activities and are better equipped to handle peer pressures and temptations to engage in illicit behavior.

Often couched as “mini-courses” within traditional biology, home economics or PHYSICAL EDUCATION courses, health education has its roots in the GYMNASIA of ancient Greece, where physical and intellectual exercises were deemed essential to the unity of the total being and essential for conditioning young men as warriors. In 1823, CATHERINE BEECHER may have been the first teacher to introduce health education in an American school when, in one of the great innovations of her day, she introduced calisthenics and exercise as part of the regular curriculum at her famed HARTFORD FEMALE SEMINARY in Connecticut. In an article entitled “Letters to the People on Health and Happiness” in 1856, Beecher described the sickly condition of a large proportion of American women and children and warned teachers that the “two grand causes of ill health and physical deterioration so common are, first, a want of *knowledge* [her italics] of the construction of the body and the laws of health; and, next, a want of *thought* and *conscience* on the subject.” She then urged “every school” to adopt a planned system of physical exercises that she had invented and that contained

all that either sex needs for the *perfect development* of the body. . . . For this purpose it

ought to be the official duty of one person to take charge of all that relates to the health and physical training of every collection of the young for education. . . . The teacher who has charge of the Health Department might give out one lesson a week from this [Beecher’s] book to the whole school. This should be preceded by a familiar lecture on the subject, *illustrated by specimens*.

Few schools other than women’s academies followed Beecher’s suggestions until after the Civil War, when secular educators began taking charge of men’s schools and replacing the clerical teachers who had frowned on exercise and sports as sinful amusements. By the late 19th century, gymnasias began to be added to school, college and university plants, following the development by LUTHER GULICK of a formal physical education program that was eventually integrated into elementary and secondary school curricula.

The classroom elements of health education seem to have emerged as an outgrowth of intensive student questioning of teachers in physical education, biology, home economics and like subjects. Formal classroom courses in health education average one hour a week for two years. For that reason, few teachers specialize in health education, which, in most schools, is a part-time position. Most health education courses are traditionally assigned to physical education teachers, many of whom have limited formal training in health education and its pedagogy.

health-occupations education The training and formal instruction required for a variety of health-related jobs that usually do not demand a professional degree. Required instruction may range from on-the-job training to certificates or associate degrees from junior or community colleges and technical institutes. Among the many health occupations requiring only a high school diploma are dispensing opticians, emergency

medical technicians (paramedics) and licensed practical nurses. Among occupations requiring an associate degree are electrocardiograph technicians, dental hygienists, medical laboratory technicians, medical record technicians and radiological (X-ray) technicians.

Training to become a registered nurse is available in both two-year associate degree programs at community colleges and three-year diploma programs at hospitals. Pressures are growing, however, to make the R.N. a four-year bachelor's degree program because of the expanding patient-care responsibilities doctors are ceding to registered nurses. In all areas of health care, registered nurses must graduate from one of the approximately 1,500 accredited programs and obtain licenses available only after passing a national examination administered by each state.

health services In education, the provisions of a school or college for treating students, faculty and staff for a wide variety of illnesses and injuries. Limited by individual state laws, health services may range from first aid, administered by a part-time practical or registered nurse at a small elementary school, to the operation of a hospital or infirmary at many boarding schools and colleges. State laws usually restrict public school health services to minor first-aid and the dispensing of drugs prescribed by the student's own physician. Where permitted by state laws, some school districts may also have consultancy contracts for the services of a physician, psychologist or psychiatrist, and several hundred public schools, most of them in low-income school districts, have clinics staffed by full-time nurse practitioners. Such clinics have been a center of controversy for offering sex-counseling services to teenagers unable to gain access to or afford primary health care services. Indeed, 10% of the services provided by such clinics relate to reproductive health and sexually transmitted diseases. Treat-

ment of acute illnesses, however, accounts for the largest percentage of services—29%—with mental health accounting for 18% and physical examinations for 15%.

Healy v. James A unanimous 1972 U.S. Supreme Court ruling that Central Connecticut State College (CCSC) could not prevent students from forming a chapter of the STUDENTS FOR A DEMOCRATIC SOCIETY (SDS), nor could the college deny students the use of campus facilities without evidence that they intended to disrupt the local campus. Although the national SDS organization was originally formed to give students more control over university affairs, and although the CCSC president was personally opposed to SDS, the Court held that

among the rights protected by the First Amendment is the right of individuals to associate to further their personal beliefs . . . There can be no doubt that denial of official recognition, without justification, to college organizations burdens or abridges their associational rights. . . . The mere disagreement of the college president with the group's philosophy affords no reason to deny it recognition. . . . If there were an evidential basis to support the conclusion that CCSC-SDS posed a substantial threat of material disruption . . . the president's decision should be affirmed.

(See also STUDENT RIGHTS.)

hearing impaired Any person with a hearing loss, whether mild, moderate, severe or profound. "Deafness" is simply one degree of impairment among the hearing impaired, whose hearing capabilities range from 95 to 150 decibels, with zero being an imperceptible sound, 70 decibels the sound of a normal conversation and 120 decibels the sound of a jet airplane. A sound of 130 decibels is painful to the normal ear, while 150 decibels is

equivalent to the loudest air-raid siren. With proper care, the majority of the hearing impaired can develop normal speech and learn to function normally in every way, both in and out of school. Routinely “MAINSTREAMED” in traditional classes with children without handicaps, the hearing impaired may or may not require special in-class help, depending on the degree of their disability. Usually, personal hearing-aid devices are sufficient for mainstreaming, although some younger children may require additional help from teacher’s aides—to repeat a teacher’s remarks to the class, for example, by either close-up, face-to-face repetition of the words with more visible lip movements or by simplifying a teacher’s inaudible remark with simple noun-verb summaries.

(See also BELL, ALEXANDER GRAHAM; DEAFNESS.)

Hebrew The language of the Old Testament and a required subject, along with Greek and Latin, in the curriculum of the early, theologically oriented colleges in the American colonies. An outgrowth of the Tudor educational revolution in England, Hebrew language studies began in grammar schools, where boys were expected to become fluent in Latin and gain an elementary knowledge of Greek and Hebrew during their seven years of preparation for college. Colleges of that era were theological schools where students training for the clergy were expected to be able to study Scripture in its original languages and subsequent translations: Hebrew, Greek and Latin. The Tudor educational revolution had started with Henry VIII’s break with the Catholic Church over the question of his divorce. A consequence of that break was the creation of the Anglican Church and the translation of the Bible into English, a development that offered literate Englishmen access to scriptural texts to which only the Roman Catholic clergy had hitherto been privy.

With that access, however, came the necessity of “careful education of the young,” according to Bishop Aylmer’s proclamation in *A Booke of Certaine Canons* (1571), and the need to supervise their “religion, life and conversation,” their church attendance and their partaking of Holy Communion, their use of the authorized catechism and their private activities, particularly with respect to popish teaching or the delivery of lectures preaching “innovations.” By teaching students to read Scripture in its original languages, English schoolmasters contended they “protected” their charges from “popish interpretations of mysterious tongues.”

So long as theology was the primary course of study at colleges in the American colonies, Hebrew remained a required course. Its importance gradually diminished in the 17th century, however, as the Age of Enlightenment and the Industrial Revolution saw the growth of secular studies. By the end of the Civil War, Hebrew had disappeared as a required course, and secular studies began dominating college curricula, leaving theology as a specialized course of study within a broad-based liberal arts education.

Hebrew Free School Association A 19th-century organization that countered efforts of Christian missionaries by founding a group of free schools for New York City’s Jewish immigrant children. In 1864, Christian missionaries had opened a school on the Lower East Side that offered to teach Hebrew to Jewish children, but the offer proved only a lure to convert Jewish children to Christianity. Outraged, a dozen Reform and Orthodox congregations opened a Hebrew free school nearby, with a complete Hebrew studies program that supplemented the standard curriculum of secular public schools. The school was so successful that the organizers formed a Free Hebrew School Association that opened branches in other Jewish neighborhoods.

Aside from turning back the threat posed by Christian missionaries, the association, which was made up of successful, Americanized Jews of German origin, became a major instrument for helping newly arrived Jews—mostly from impoverished shtetls and ghettos of eastern Europe—to adapt to their new country. In addition to traditional secular education and studies in the Hebrew language and Jewish religion and history, the schools taught the new arrivals hygiene and other American ways unknown in their homelands. The schools began closing in the 1870s, as the New York public school system expanded and as those Jews who had learned their lessons well emerged from the slums and moved elsewhere to assimilate with other Americans.

Hebrew school Any of a variety of schools that teach the Hebrew language and Jewish religion and history. At one end of the spectrum, a Hebrew school may be a full-scale, fully equipped school that combines Jewish education with the secular studies of public and private schools. At the other end is the part-time program of education conducted for children of the congregation by a Jewish temple or synagogue. Classes may be held once-a-week on Sunday mornings or on several afternoons during the week, after the end of conventional secular schools. Regardless of the breadth of the program, the curricular centrality of every Hebrew school is the teaching of the Hebrew language, both ancient and modern, of Jewish history and culture, and of the rituals and beliefs of Judaism.

Hebrew Union College—Jewish Institute of Religion (HUC-JIR) The oldest seminary in the United States dedicated to Jewish scholarship and the training of Reform Rabbis. The Hebrew Union College (HUC) was founded in Cincinnati, Ohio, in 1875 by Rabbi Isaac Mayer Wise to offer “general rabbinical

instruction . . . for the Jewish ministry.” Wise was convinced that “Judaism would have no future in America . . . unless . . . it would become reconciled with the spirit of the age” and the Jewish community found it possible to “educate American rabbis for the American pulpit.”

At the time, more than 200,000 Jews had already settled in the United States. Most had come from Germany in the 1840s and 1850s, had fanned out across the country, risen to middle and upper-middle economic status and had completely assimilated American ways. Their synagogues, however, lacked rabbis, and lay leaders adopted that role.

Seeking acceptance by their Protestant countrymen, few lay rabbis maintained the traditional Jewish orthodoxy of Europe. Indeed, little by little, there emerged a peculiarly American form of Judaism—Reform Judaism. Imitating many of the ways of liberal Protestantism, Reform Jewish congregations added organs, choirs, hymn singing, sermons and responsive readings in English. Many traditional prayers were recited in English.

Often called the “founder of American Reform Judaism,” Rabbi Wise was first to codify American Reform Judaism, which remains unlike any form of Judaism practiced in Britain or Europe. (Britain’s “Reform Judaism” is akin to American Conservative Judaism.) Rabbi Stephen S. Wise (unrelated to Isaac Mayer Wise) founded a similar school in New York City, the Jewish Institute of Religion. Motivated by financial difficulties, they merged in 1950, added a new campus in Los Angeles in 1954 and established their first campus in Jerusalem in 1963. Preparation for the rabbinate at the American campuses is equivalent to a doctoral program. The Jerusalem campus includes a postdoctoral school of archaeological and biblical studies. HUC-JIR also offers postbaccalaureate programs in sacred music for cantors, Jewish education and Jewish communal service, as well as Ph.D.

programs in Hebraic and cognate studies. All four college campuses serve secular students as well as students for the rabbinate.

Hegge-Kirk-Kirk Method A multisensory, remedial-reading instructional technique developed in the 1970s, emphasizing repetitive drill and practice with sounds of individual letters and letter combinations. Designed for the mentally retarded and older, reading-disabled children functioning at the first-, second- or third-grade level, the method helps children learn by having them see, sound, hear, trace and touch letters and letter combinations.

Henrico College A college that was to have been founded in Henrico, Virginia, originally "for the education of the children of those American Indian barbarians," but later for both Indian and English children. The school was originally proposed by James I in 1617, after he was charmed by the converted Indian princess Pocahontas during her visit to England. The Henrico project was backed by contributions of more than £2,000 and a large tract of land from the Virginia Company. The college had even appointed a rector, the Reverend Patrick Copland, chaplain of the Royal James and East India Company Fleet, and the owner of a fine library. In 1622, however, Indians raided Henrico, massacred settlers and left the Virginia Company—and the proposed college—ruined.

Henry, Joseph (1797–1878) Leading American physicist and mathematician; responsible for converting the Smithsonian Institution in Washington, D.C., into a major sponsor of American scientific research. Born in Albany, New York, he became a professor of mathematics and natural philosophy (physics) at the Albany Academy, where he had been educated. While there, he conducted a series of major

research projects that led to the invention of the first electric motor, insulated wire (which he used to develop multilayered coils and powerful electromagnets) and a primitive version of the electric telegraph. In 1830, he discovered self-inductance in a coil and laid the groundwork for the development of the transformer—two years before the formal announcement of its discovery by Michael Faraday, to whom the discovery is often credited. (In 1893, by international agreement, Henry was honored posthumously by giving his name to the "henry," the basic unit of electrical inductance.) In 1832, he was named professor of natural philosophy at the COLLEGE OF NEW JERSEY (now, Princeton University), where he invented the galvanometer, discovered the oscillatory nature of electric discharge and investigated solar radiation and sunspots.

In 1846, by which time he was recognized as one of the giants in the world of physics, he was chosen first secretary and director of Washington's new Smithsonian Institution, which, like many museums and libraries of the era, was established to become a repository of knowledge. Henry immediately changed the course of the fledgling institution. In his "Programme of Organization," he proposed that it actively promote and support basic scientific research. Rather than lose the distinguished Prof. Henry, the board adopted his two-pronged policy to increase and to diffuse knowledge. To increase knowledge, he proposed "to stimulate men of talent to make original researches, by offering suitable rewards for . . . new truth." To diffuse the knowledge acquired from such research, he proposed publishing the progress and results of such research in widely circulated periodicals to replace the slow, traditional method of diffusion via correspondence between scientists and by word of mouth in university lecture halls.

"In this country," he wrote in his Programme of Organization, few scientists "devote themselves to the continued and patient

thought necessary to the discovery and development of new truths. The principal cause of this want of attention to original research, is the want, not of proper means, but of proper encouragement. The publication of original memoirs and periodical reports . . . will act as a powerful stimulus on the latent talent of our country, by placing in bold relief the real laborers in the field of original research. . . ."

The result of his efforts was the long-term commitment of the institution to serious, scholarly research and the development of the first periodicals to diffuse scientific knowledge. Coincidentally, Henry also initiated weather reporting systems by organizing a corps of volunteer weather observers. They evolved into the U.S. Weather Bureau. He was also active in the development of the National Academy of Sciences and served as its president.

Henry Street Settlement The first major settlement house in New York City to ease the plight of sick and homeless children roaming New York streets in the late 19th century. Part of the nationwide settlement house movement, Henry Street was founded by LILIAN D. WALD, a nurse who, with a companion, moved to New York City's Lower East Side in 1893. An overcrowded neighborhood teeming with impoverished immigrants, the Lower East Side lacked any semblance of public health care, so Wald obtained funds from philanthropist-banker Jacob H. Schiff to open the Nurses' Settlement in 1895. At the time, there were an estimated 200,000 homeless children in New York, and Wald found there were tens of thousands more uncared-for children locked in apartments by fearful immigrant parents who worked 12 or more hours a day, seven days a week and wanted to protect their children from the streets. Wald's project was an overwhelming success, with thousands of parents flocking to the Nurses' Settlement for care.

As more nurses joined the project, the need for additional facilities and services became clear. Changing its name to the Henry Street Settlement House, Wald expanded services to include day care, recreational programs, clubs for children of all ages and educational programs in citizenship and English. The settlement house also offered training in nursing and in social work. Henry Street Settlement subsequently grew into one of the major, private social service agencies in New York City, with far-reaching educational programs for children and adults of all ages, day-care programs, senior citizen centers, home-care services, theater groups, arts programs and a host of other social services reaching beyond the immediate neighborhood into deprived areas throughout the city.

Herbartianism The concepts of German philosopher/educator Johann Friedrich Herbart (1776–1841), whose "five formal steps of the recitation" influenced late 19th-century American education and temporarily slowed the development of the "PROGRESSIVE EDUCATION" movement. Occupying the chair formerly held by German philosopher Immanuel Kant (1724–1804) at the University of Göttingen, Herbart postulated the existence of formed "idea masses" (or "reals" designed for self-preservation) in every child. The role of education, therefore, was not to make children learned or technologically competent, as progressive educators such as Switzerland's JOHANN HEINRICH PESTALOZZI contended, but to expand and shape these masses with knowledge and psychological encouragement designed to develop moral character and an ethical will. To achieve such results, Herbart proposed five phases of pedagogical technique: preparation, or the stimulation of readiness in the student to assimilate new learning; presentation of material in ways appropriate to each student's background; association that relates new material to past

ideas and experience; generalization, or formulation of rules, laws, principles and guides; and application, by expression and use.

Relatively unknown during Herbart's own lifetime, Herbartianism became a force in education in the United States during the late 1800s, with the growth of universal public education and the efforts of evangelists to preserve religiously oriented morality as the core of public school education. Just as American educators G. Stanley Hall and JOHN DEWEY were succeeding in making schools more pedocentric to serve the needs of children, American Herbartians attempted to preserve the scholastic school that molded each child into the desired persona conceived by school, church and parental authorities.

In 1895, the Herbart Club grew into the National Herbart Society for the Scientific Study of Teaching, which in 1902 became the National Society for the Study of Education (NSSE). Although Herbartianism was discredited and began to disappear by 1906, Herbart was credited with having converted the theoretical study of education from a philosophical field into a scientific field. As a result, NSSE evolved into a major supporter of scientific research and discussion of significant educational issues and the publisher of some of the most authoritative annual volumes in education.

heuristic learning The solution of problems and discovery of knowledge through experimentation. Derived from the Greek *heuriskein*, to discover, heuristic pedagogy encourages independent problem solving as the path to learning rather than direct instruction with students as passive recipients of knowledge. Teachers encourage heuristic learning by asking questions, encouraging students to ask questions and challenging students to experiment and solve problems themselves. Akin to the Socratic method of ancient Greece, heuristic pedagogy is often called the deductive approach,

the discovery method, the inquiry method and the Socratic method.

hidden curriculum A colloquialism referring to the unstated educational values and goals of a school curriculum, as exemplified by the reasoning behind limiting art or music education to two hours a week, while requiring physical education and sports participation five days a week. Curricular scheduling is an important element in the hidden curriculum. Thus, basic skills education usually begins each public school day, when students arrive fresh, while arts education is relegated to hours when student motivation is lagging. Scheduling of this sort necessarily "sends a message" about the school's academic priorities and its "hidden curriculum"—as does the offering of course credits for football or basketball at some public high schools.

higher education A broad term referring to formal study beyond the secondary school level, usually provided by colleges and universities.

(See COLLEGE; GRADUATE SCHOOL.)

Higher Education Act of 1965 A landmark federal law that provided the first federal scholarships and subsidized loans to college undergraduates and established a National Teacher Corps to improve teaching quality in low-income areas of the United States. Along with the ELEMENTARY AND SECONDARY EDUCATION ACT that was also passed in 1965, the Higher Education Act marked a major expansion of the federal government's role in American education. Among its provisions were grants for university community service programs; grants for college libraries, library training and research; funds designed to strengthen newer, developing colleges; and establishment of teacher training programs and teacher training fellowships. But its most far-reaching program was the establishment of outright federal grants

and a program of low-interest student loans that, by 2000, helped underwrite the cost of education for about 4.25 million college students a year, or more than 25% of the college population. Grants were issued on the basis of need, while loans were made available through commercial banks at low interest rates, with the government not only guaranteeing repayment of the loans, but also making up the difference between the low rates the banks charged students and the rates they would have received from conventional personal loans. The grants and loans not only opened the door of higher education to the poor, they also provided an enrollment surge that strengthened many financially shaky colleges.

The act had widespread implications for private, as well as public, colleges and universities, by making colleges that violated federal antidiscrimination laws ineligible for the new bonanza in federal funds. The universal rule for colleges became: The acceptance of any federal funds—directly or indirectly, via student grants and loans—requires strict compliance with all federal laws. Always strapped for funds, colleges quickly complied by opening their doors to students of both genders and all races, religions and national origins.

The act is renewed regularly, with sharp up-or-down adjustments in the amounts allotted to various spending programs—government-guaranteed STUDENT LOANS, for example, or family income limitations for aid eligibility.

(See also FINANCIAL AID.)

Higher-Order Thinking Skills Compensatory Program A computer-based system for teaching low-achieving or educationally, deprived elementary school students to solve problems independently, with little help from the teacher. Originally funded by the U.S. Department of Education and later by the Ford Foundation, the program adds the excitement of the computer to the learning process and

promotes individualized problem-solving activities by giving each student problems different from those of other students. By individualizing each student's problems, the program eliminates the need for ability grouping, which often embarrasses slower students sitting with more gifted students. Such a program affords students an opportunity not only to solve specific problems but also to explain problems and solutions to other students.

high school A uniquely American institution, first developed in Boston as a publicly supported alternative to the Latin GRAMMAR SCHOOL. The grammar school emphasized the study of Latin and Scripture in preparation for the study of theology. The academy, on the other hand, was a boarding school that offered a broad-based academic and religious education to prepare wealthy students for college. The first high school was Boston's English Classical School (later, the English High School), which opened in 1821 and grafted the secular education of the Latin grammar school, which generally taught children and young adolescents, with the higher levels of academic education, which taught students until they were ready for college. An alternative to the boarding school/academy, the English Classical School was the first free public school in America. Although similar, nonboarding high schools opened in Portland, Maine, and Worcester, Massachusetts, neither was free or public in the modern sense. In 1825, the High School Society in New York City opened the first high school outside New England, but, like those in Portland and Worcester, it was neither public nor free. A year later, Boston proposed a free high school for 130 girls, but it abandoned the project after applications far exceeded the number it could accommodate and would have required construction of several schools.

The creation of the high school was the beginning of what became the unitary American

system, with single elementary and secondary stages for all children, who, upon completion, could then choose between higher education or jobs. In contrast, England, France, Prussia and other advanced European nations created dual systems that prepared the vast majority of youngsters for jobs, while a structurally separate system prepared an elite group of youngsters—usually the sons of the nobility and the landed gentry—for higher education.

Ahead of its time by several decades, Boston's English Classical School had no imitators until 1836, when Philadelphia's Central High School opened as a free, public institution. Both schools remained ahead of their times, however, and even New York City had no public high schools in the 1870s, when leaders of the public school movement began their campaign to convince the American public of the benefits of, and need for, universal public education. At the end of the 1870s, the United States could boast of only 110 public high schools, but the fervency of the public school movement's backers led to a near-doubling to 203 in the next decade, and a further doubling in each successive decade for the next half century—to 519 by 1900, 915 by 1910, 2,200 by 1920, 4,399 by 1930, 6,601 by 1940 and eventually more than 24,000 by 2000.

Instrumental in the growth in the number of high schools was the passage of state COMPULSORY EDUCATION laws. Despite protests from industrialists who relied on adolescents for cheap labor, every state had passed some form of compulsory education law by 1918, but lack of enforcement saw only about one-third of American youngsters attending high school in the 1930s. Passage of federal child labor legislation, however, produced a surge of high school attendance. By 1950, about 80% of American adolescents were attending high school, and the figure reached about 95% by 2000.

As public high school education became universal, however, the numbers and percent-

ages of "terminal students" who were not preparing for college increased to levels where high schools were forced to broaden their curricula to make them more practical for students who planned entering the job market upon completion of their studies. Newer, practical areas of study such as general science, manual training, home economics, bookkeeping and typewriting were added. By the end of the 20th century, high schools had evolved into three-track units, in effect, into three types of high school within each school: one for college-bound students; a second, vocationally oriented school that prepared students for work as skilled craftsmen; and a third, GENERAL EDUCATION program that gave students a less demanding, superficial exposure to academic education, while emphasizing broad-based courses that prepared students for white-collar employment in non-skill-based occupations such as clerical work.

In addition to broadening the scope of education, high schools had to broaden the scope of noneducational functions to meet the needs of an ever-diversifying student population. Part of the diversification stemmed from a wave of immigration that brought more non-English-speaking foreign-born children into the schools. In addition, civil rights laws opened the traditional high school classroom to a wide variety of academically HANDICAPPED children who had previously attended special schools. Among them were impoverished, physically handicapped, learning disabled, hearing visually impaired, mentally retarded and emotionally disturbed—and a wide variety of other potentially disruptive—students, who required special education and social and therapeutic services that made American high schools unique in the world.

(See also COMPREHENSIVE HIGH SCHOOL; HIGH SCHOOL, A REPORT ON SECONDARY EDUCATION IN AMERICA; HIGH SCHOOLS, U.S. VS. FOREIGN; SECONDARY EDUCATION; TRACKING.)

High School and Beyond A periodic, national survey of post-high school placements, conducted by the National Center for Education Statistics of the U.S. Department of Education, Washington, D.C.

High School, A Report on Secondary Education in America A scathing report on high school quality in the United States in 1983, published by the Carnegie Foundation for the Advancement of Teaching. Written by foundation president, Ernest L. Boyer, the report found an “alarming gap” between the educational results of American High schools and the basic education that most graduating students needed to function as adults. Boyer cited studies showing that American high school students ranked among the lowest one-third of students from 12 nations in reading comprehension and that they scored lowest in mathematics and ranked lowest with one other nation in civic education.

The report found that more than 65% of companies it surveyed said that basic-skills deficiencies limited job advancement of their employees and that 35% of all companies were forced to offer “a basic skills remedial program of their own” to the high school graduates they employed. More than half the American businesses surveyed said that speaking and listening were serious problems for employees.

The report called for far-reaching reforms of American high school education. In the area of administration, it called for reductions in non-teaching school bureaucracies and establishment of school-based administrations, with principals in full charge of administration. It called for a strengthening of the teaching profession through improvements in classroom conditions, improved recruitment and teacher training, better continuing education for teachers, and better teacher recognition and rewards. Its proposed curricular reforms included stressing the centrality of language, restoration of

CIVICS as a required course, and providing each student full access to computers and other technological advances designed to improve education.

Its most startling recommendation was “that the current three-track system, academic, vocational, and general—be abolished. It should be replaced by a single-track program—one that provides a core education for all students plus a pattern of electives, keeping options open for both work and further education.” The report called for all American high schools to offer a core curriculum of required courses in language and literature, the arts, foreign languages, history, civics, science, mathematics, technology and health.

high school reform An amorphous, ongoing effort by a variety of organizations to improve academic achievement in American high schools. As old as secondary education itself, the high school reform movement gains and loses momentum according to gains or declines in graduation rates and in the academic proficiency of students, as measured by standardized tests and compared with similar students in other developed, industrialized societies.

Beginning in 1989, the U.S. government has sponsored periodic “summit meetings on education” to bring together federal and state officials, educators and leaders of businesses and FOUNDATIONS that contribute to education. The fifth such summit in 2005 attracted governors of 13 states, along with officials of six foundations that offered \$23 million to help the states reform their high schools. The summit followed the release of statistics showing that 30% of ninth grade students in American public high schools fail to earn a standard diploma within four years, and one-fourth of entering college freshmen never return for a second year.

Suggested reforms, however—like those of previous educational summits—were vague, at

best, and omitted methods of implementation. Specifically, summit participants called for raising high school standards, requiring all students to take rigorous courses that prepare them for college and work, testing students regularly to measure their progress, and holding schools accountable for student achievement by measuring drop-out and graduation rates. Summit participants did not address the key to raising high school academic achievement—namely, elementary school reform. Nearly 70% of American students begin their first year of high school functioning below grade level in reading, writing, mathematics, science and history. Critics of American public-school education cite a host of reasons for low academic achievement of elementary school children, including inadequate teacher training, high pupil-teacher ratios, inadequate per-pupil spending, low teacher pay, poverty and so forth. Unlike academically demanding schools, where teachers must have academic backgrounds in the subjects they teach, public elementary schools require only education degrees of their teachers, who often have little knowledge of mathematics, history, science or the principles of English grammar. Only 23 states require beginning high school teachers to have majored in the subjects they teach; only 29 require teachers to pass subject tests, and only nine states require middle school teachers to do so. As late as 2000, only 63% of public school teachers in the United States held degrees in the subjects they taught; only 22% of English teachers, 26% of science teachers and 28% of math teachers had majored in those subjects.

As for other criticisms of public high school education, there is little correlation between student academic performance and either student-teacher ratios, teacher salaries or spending per pupil. Two student-body characteristics that do correlate with academic achievement may have been too charged politically to warrant consideration, let alone discussion. High

poverty rates and minority enrollment both correlate inversely with academic proficiency.

Another reform thrust has called for ending the “college-for-all” concept in American education and expanding VOCATIONAL AND TECHNICAL EDUCATION and TECHNOLOGY EDUCATION. Expansion of vocational education would permit students entering high school to choose between a college-preparatory curriculum and a technical, career-oriented curriculum providing training and apprenticeships in a variety of trades and technical occupations—usually in cooperation with local industry. The alternative-curriculum approach has been standard since the end of World War II in western Europe and other industrially developed countries. With the less academically inclined on a different educational track, European students on the academic track consistently outscore American students of the same age in reading, mathematics and science literacy tests. Although the U.S. spends an average of \$8,855 per student on primary and secondary school education—the highest in the world except Switzerland, which spent \$9,780—American 15-year-olds ranked only 18th in reading literacy, 28th in mathematics literacy and 14th in science literacy in recent tests of students from 28 industrialized countries. Recent NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS tests of American high school seniors found only 36% proficient in English and 17% proficient in mathematics.

(See also STATES, EDUCATIONAL COMPARISONS.)

high schools, U.S. v. foreign The constantly shifting comparison of the academic achievement of American and foreign high school students. At various times since the mid-1950s, such comparisons have purported to prove that American students are hopelessly behind, relatively equal to or ahead of their foreign counterparts. According to *The School in Question: A Comparative Study of the School and Its Future in Western Society*, by Torsten Husen

of the University of Stockholm, American high school students ranked lowest in mathematics among high school students from 12 industrialized nations in 1967. Subsequent studies found U.S. students ranking in the lowest one-third of students in reading comprehension and tied for the lowest scores in civic education. The poor showing of American schoolchildren provoked widespread demands for reform of American public school education, and those reforms began having noticeable effects by the end of the 1994–95 academic year, when new tests by the Paris-based Organization for Economic Cooperation and Development found American students at all grade levels outperforming students in all nations except Finland in reading comprehension. The improvements did not last, however. By 2000, U.S. 15-year-olds tied for 18th in the world with the French in reading literacy, 28th in the world in mathematics literacy and 14th in the world (again tied with French students) in science literacy. Students in Australia, Austria, Belgium, Britain, Canada, Denmark, Iceland, Ireland, Japan, Finland, Norway, South Korea and Sweden consistently scored higher than American students in most areas of academic achievement.

While widely cited by educational reformers, such international comparisons may or may not have any validity. To have validity, students selected for such comparisons must be paired prior to testing and matched for all variables other than educational achievement—to control all factors other than educational quality that might affect test results. Indeed, the United States public school system is so different from public school systems in other nations that comparisons of student achievement almost certainly lack any validity.

For one thing, enrollment rates differ sharply. Elementary school education is compulsory throughout the world and enrollment rates approach 100%—as they do in the United

States. Enrollment rates at the middle and high school levels, however, average a mere 58% in the rest of the world, compared to a rate of more than 96% in the United States, where academic secondary school education is compulsory and universal. Thus, most secondary school systems in other countries are self-selective, automatically weeding out low achievers when they reach the age of 12 or 14 and either sending them off to labor, as they do in third-world countries, or to apprenticeships or vocational schools, as they do in the more advanced, industrialized nations such as France, Germany and Japan, among others. The process allows only the academically gifted to remain in academic high schools to compete in international testing with a far more average cross-section of American high school students.

The American public school system is unique in that it is the only system in the world attempting to provide universal, academically oriented education to a massively heterogeneous student population of rich, poor, English-speaking, non-English-speaking, white, minority, handicapped, learning disabled, hearing or visually impaired, emotionally disturbed and mentally retarded—sometimes all in one building or classroom. Average achievement levels rise in schools with relatively advantaged, homogeneous student populations. It is not difficult to understand that the achievement level will be higher in classrooms with students who speak the same language, are equally healthy and wealthy, and from whom all disruptive children have been culled. The chances are nil of achieving the same academic results in a student population without similar advantages. If such comparisons have little statistical validity, they do, however, bring to the fore the question of whether the American public school education system should be doing what it is trying to do or whether it should convert its system to one more akin to those of Europe or Japan.

Hispanic Americans The Spanish-speaking population of the United States. Overwhelmingly made up of persons from the Americas, Hispanics became the largest minority in the United States at the end of the 20th century, increasing more than 80% over the last two decades to a total of 40 million by 2003—more than 13.7% of the United States population. In 1990, African Americans had been the largest minority, and while their numbers increased 23% in the years that followed, the 2003 total of 37 million constituted only 12.75% of the American population. Most Hispanics in the United States are of Mexican origin, 59%; the second-largest group, Puerto Ricans, constitutes only 9.7%. About half of all Hispanics live in two states—California and Texas, where Hispanics, mostly of Mexican origin, make up about 35% of the population. Hispanics largely of Cuban origin make up nearly 20% of the population of Florida, while Hispanics largely of Puerto Rican origin make up 16.3% of the population of New York State. Other states with significant numbers of Hispanics are New Mexico (810,000, or 43% of the population), Arizona (1,550,000, or 27.8% of the population), Colorado (847,000, or 18.6% of the population), New Jersey (1,254,000, or 14.5% of the population), and Illinois (1,727,000, or 13.6% of the population).

In 2003, there were nearly 15 million Hispanic children 18 or younger in the United States—2.32 million more than the number of non-Hispanic black children. Hispanic children accounted for more than 17% of the U.S. public school population—a 45% increase over the previous 10 years. They made up 51% of the public school population in New Mexico, 44.5% of the school population in California, 42% in Texas, 35.3% in Arizona, 27.4% in Nevada, 23.3% in Colorado, 20.4% in Florida, 18.6% in New York, 16.2% in Illinois, 16% in New Jersey and between 10% and 15% in Connecticut, Idaho, Massachusetts, Oregon, Rhode

Island, and Washington. By 2005, however, the Hispanic population was growing fastest in the South, where the accelerating pace of industrial expansion created a shortage of low-skill workers. In the Atlanta, Georgia, area, the Latino population increased nearly sevenfold, as Hispanics filled two-thirds of the jobs at construction sites. In Benton, Arkansas, the Hispanic population increased ninefold, as Hispanics filled nearly three-quarters of the jobs in the huge meat-packing industry. The flood tide of Hispanic immigration in such areas created all but insoluble problems for local school systems, given the absence of teachers with experience teaching non-English-speaking students.

Nearly 25% of all Hispanic children in the United States—about 3.5 million—live below the poverty level, slightly below the 27% poverty rate for African-American children but double the rate for white children. In single-parent homes, which make up nearly 40% of Hispanic families in the United States, half the children live below the poverty level. Twenty-seven percent of all Hispanic students drop out of high school without graduating, compared with drop-out rates of 10.9% for blacks and 7.3% for whites. Despite these dismal statistics, the percentage of Hispanics enrolled in two- and four-year colleges climbed dramatically during the last two decades of the 20th century, from 3.6% in 1990 to 10.5% in 2001.

Nevertheless, academic achievement among Hispanic children, as measured by standardized tests, remains dismally low. Hispanic children start kindergarten with scores 21.3% below those of white students on general knowledge. Their reading skills are 15% below those of white students, and their overall mathematics skills 18% lower. Their specific skills for addition and subtraction were a startling 65% below white students. Their skills improve somewhat with years of schooling, but not enough to put Hispanics on an even footing with their white counterparts when they are

ready to enter college or the job market. Nine-year-old Hispanics scored 12.7% below white students in reading and 11% lower in mathematics; for 13-year-olds, the disparities were 8.6% in reading and nearly 8.5% in mathematics; at 17, the disparities narrowed only slightly, to 8.1% in reading and 7% in mathematics.

Achievement scores of Hispanic students of all age groups rank only 2% to 3% above those of non-Hispanic blacks in all academic areas—an indication of common deficiencies that the U.S. Department of Education has described in several studies.

- High poverty rates.
- Dysfunctional language development.
- Lack of adequate parenting during preschool years.
- Less access to day care programs.
- De facto segregation: More than 75% of all Hispanic students attend public schools in which more than half the student body is non-white, thus clustering low achievers with other low achievers.
- High mobility: Poor families move more frequently, displacing children from schools and disrupting educational continuity.
- Poor teacher quality: Schools in high-crime neighborhoods draw the least qualified teachers.
- The “summer effect”: Poor children tend to fester on the streets of their crowded neighborhoods in summer, while wealthier children go to summer camps, take vacations and participate in library and other learning activities.

In an effort to improve academic performances of Hispanic students, schools across the United States have introduced a variety of BILINGUAL EDUCATION programs. Most have produced few significant gains in reading or writing proficiency, or in mathematics. As the Hispanic population of the United States has increased, the education of their children has created a storm of controversy in communities where they represent a significant element of

the student population, and the introduction of bilingual education lies at the heart of the storm. No previous group of non-English-speaking students in American history has ever been offered the opportunity of speaking their own language at public school.

Regardless of what language they spoke at home, immigrant children spoke English at school. Indeed, it was the forced immersion of immigrant children in the language of their new land that formed the core of the “AMERICANIZATION” process that constituted one of the primary goals of American education in the late 19th and early 20th century. Bilingual education raised a question of whether it would produce a generation of Hispanic Americans who are bilingual, but whose lives and futures are tied to the United States, or a generation of American Hispanics who speak English but who remain culturally, politically and emotionally tied to their countries of origin.

history The study of the chronology, causes, results and interrelationship of events that shape a region, nation, continent or civilization. History is, perhaps, the most imprecise course studied in school because of its dependency on the accounts and interpretations of other, usually biased human beings, who may or may not have been firsthand witnesses. Just as the accuracy of eyewitness testimony may be suspect in court, it is even more so in the relating and interpretation of history.

The study of history in contemporary American schools begins in elementary school, with kindergartners learning the major holidays and what they celebrate and the concepts of town, state and country and of people both “like us” and “different,” living elsewhere on the globe. It continues in the first three grades with a superficial, broad-based introduction to history, geography and civics, with students learning about significant Americans, explorers, Indians, American customs and symbols

and the meaning of citizenship. Fourth grade sees students embark on more in-depth study, complete with appropriate textbooks, of U.S. history before the Civil War, while fifth graders complete the study of U.S. history, and sixth graders study a brief panorama of world history to the Middle Ages. Seventh graders study world history from the Middle Ages to 1900, and eighth graders study world geography and Asian history and civilization.

A complete high school history course would include a year each of anthropology and ancient history, medieval history, modern European history and American history and government. But the average public high school graduate studies an average of only three years of history, one year of which is a required course in American history. Many states also require one year of state history. Though still required in most private high schools, courses in ancient, medieval and modern European history are largely electives in most public high schools, with studies of those periods relegated to the aforementioned elementary and middle school levels. Despite their many years of history studies, American youngsters emerge from high school with little knowledge of any history. Indeed, 57% of high school seniors demonstrated a less-than-basic knowledge of history on proficiency tests in 2002, and only 12% demonstrated proficient or advanced knowledge of history.

The study of history in primary and secondary American schools began somewhat haltingly in the last decades of the 18th century, at a time when the political loyalty of student families to England presented problems for schoolmasters who wanted nothing but peace in their classrooms. Most, therefore, limited history lessons to Bible accounts of ancient days and steered clear of current events until after the Revolutionary War.

The first United States history textbooks for primary schools appeared in the 1780s and

1790s, with "ordered accounts" of American history from "aboriginal times" to the Revolution, as compiled from other sources by Philadelphia printer John M'Culloch. History did not become an integral part of the curriculum until the 1830s, however, when Connecticut publisher SAMUEL G. GOODRICH, a pioneer in the development of children's textbooks, published an attractively illustrated series of textbooks, written appropriately for each grade. These quickly became the standard history texts in most schools. Like all histories of the day, they mixed tales of actual events with moralization, political propaganda and Protestant, Christian religious beliefs. They were not subtle in describing the superiority of Americans and American institutions, the inferiority of non-whites and the truths of Protestant Christianity. Northern texts preached the evils of slavery; southern texts, its Godly benefits and necessity, for both blacks as well as whites.

Although some primary or secondary school history texts make an effort to be objective, few modern books or courses geared to those levels have avoided mixing morality, patriotism and nationalism with the study of actual events of the past. The use of school history courses to inculcate young students with state-approved political or religious beliefs is a long tradition that predates the United States, and, indeed, goes back to ancient Greece and the earliest formal education practiced by Socrates, Plato and Aristotle. Socrates was condemned to death because of his apparently contrary attitude toward the Athenian state and established religion. Few teachers of the young have emulated Socrates, and most retained their positions (and lives) in the centuries that followed by teaching any version of history that was proclaimed by the ruling church or state.

To this day, history remains the primary vehicle for inculcating the young with loyalty to the state and to moral codes taught by offi-

cial or predominant religions of each state. The study of objectively written history (if, indeed, such a thing exists) seldom begins before students reach college or graduate school.

Of the 50 most academically selective colleges in the United States, however, none requires a course in American history, and only five require any study of history as part of their distribution requirements. Distribution requirements, moreover, are so vague that they can usually be satisfied by courses in other fields, such as English, psychology, education or even music. A study by the American Council of Trustees and Alumni found seniors at the 50 most selective colleges historically illiterate—unable to identify Valley Forge, words from the Gettysburg Address, or any basic principles of the U.S. Constitution. Titled *Losing America's Memory: Historical Illiteracy in the 21st Century*, the study found that 85% of students would have received a D or F on high school-level American history examinations.

Holbrook, Josiah (1788–1854) American educator and founder of the AMERICAN LYCEUM, the first organization ever to provide adult education in the United States. Born in Derby, Connecticut, Holbrook graduated from Yale in 1810 and returned home to found a school—twice. The first effort failed as an agricultural school in 1819 and the second as an industrial school in 1824. Holbrook turned to the lecture circuit, then a primary provider of education and entertainment for the mass of unschooled American adults. He was so enthused by the eagerness with which his adult listeners sought knowledge that he decided to form “associations for mutual instruction in the sciences and in useful knowledge generally.”

“It seems to me,” he wrote in an article in the *AMERICAN JOURNAL OF EDUCATION* in 1826, “that if associations . . . could be started in our villages . . . they would increase with great rapidity, and do more for the general diffusion of

knowledge, and for raising the morals and intellectual taste of our countrymen, than any other expedient which can possibly be devised.”

After delivering a series of lectures on the natural sciences in Millbury, Massachusetts, he convinced a group of his listeners, all local farmers and mechanics, to organize themselves into Millbury Lyceum No. 1, Branch of the American Lyceum. Within a few months, he organized lycea in a dozen other villages and became a fervent, tireless missionary for the movement. By 1834, he had organized some 3,000 lycea across the United States, all loosely tied to a central American Lyceum Association, from which he supplied each chapter with books, lecturers and the weekly *Family Lyceum*, which he published. The Lyceum became one of the great educative institutions of the 19th century, when most American went to work in fields, mines and factories at the age of five or six and had little or no access to formal education.

Holbrook's organization provided untold thousands of unschooled Americans with correspondence courses with which to better themselves. Until the Civil War, it also gave Americans the opportunity to hear lectures by some of their nation's greatest thinkers and public figures, including Ralph Waldo Emerson, Nathaniel Hawthorne, Henry David Thoreau and Daniel Webster. Holbrook continued promoting the Lyceum movement until his death at the end of the Civil War.

Holmes Group A consortium of about 100 university-based schools of education founded in 1986 to reform teacher education and the teaching profession. Named after Henry Holmes, a former dean of the Harvard Graduate School of Education, the Holmes Group represents schools that train about 20% of America's 3 million teachers. Among the reforms the group has sought is a broader liberal arts and science education for prospective teachers and

a broader racial mix, with specific training for teaching in inner-city schools.

homebound instruction The teaching, by certified professionals, of children who—for whatever reason—are unable to attend school, either temporarily or permanently. Improved two-way communication via telephones, the Internet and television monitors have raised academic standards of homebound instruction since the days when certified teachers had to travel to homes and hospitals to provide whatever help and formal instruction students needed to keep pace with their peers. Homebound teachers, as they are called, tend to be generalists, often retired or part-time substitute teachers who can teach a wide range of subjects and cover the same materials being presented at the student's school.

Homebound students vary from those temporarily crippled by accident or illness to those permanently injured, retarded or otherwise so handicapped as to be unable to attend school. Because of their day-to-day variability, no figures are maintained on the number of homebound students. Their number has declined, however, since passage of the EDUCATION FOR ALL HANDICAPPED CHILDREN ACT OF 1975, now the Individuals with Disabilities Education Act, which mandated the mainstreaming of as many handicapped children as possible in conventional schools. The act also provided federal funds to ensure appropriate transportation to and from school for handicapped students and construction of barrier-free schools that permit the handicapped to physically negotiate the entire school plant.

home demonstration agent A professionally certified home economist employed by LAND-GRANT COLLEGES to provide instruction and practical demonstrations of home economics, family living, child care, social and cultural

adjustment, and consumer education to individuals and groups outside the formal classroom setting. Working out of the U.S. Department of Agriculture's COOPERATIVE AGRICULTURAL EXTENSION SERVICE offices, home demonstration agents work with children and youth groups, adults and the elderly.

The work of the home demonstration agent was created in 1914 with passage of the SMITH-LEVER ACT, which established cooperative extension programs to encourage dissemination by land-grant colleges of "useful and practical information relating to agriculture and home economics . . . to persons not attending or resident in said colleges, through field demonstrations, publications and otherwise."

home economics The study of a wide variety of topics relating to management of the home, the family and the home life of the individual. Taught to a lesser or greater degree from kindergarten through graduate school, home economics is usually divided into five broad areas of study: housing, foods and nutrition, clothing and textiles, human development and the family, and home management and family economics. Within these areas, topics may include the domestic arts, such as cooking, nutrition, housekeeping, needlework, handicrafts and hygiene; consumer education; child development; family relationships; clothing and textiles; interior design; and institutional management of restaurants, hotels, hospitals, schools and colleges, prisons and catering organizations.

Home economics as a course of study emerged from the domestic and ornamental arts curricula of girls' academies in the early 19th century. Barred from men's academies and colleges, young women were restricted to studying those skills that would serve them best as future wives and mothers. Educator CATHERINE BEECHER, who pioneered equal educational rights for women, also pioneered the development of home economics as an inte-

gral part of the American primary and secondary school curriculum. "Women," she argued, "are not trained for their profession" as mothers and teachers of their young. Therefore, she concluded, the surest way for women to influence national affairs was to recognize the "natural differences" between man and woman, cede the political arena to men and become influential as skilled family managers.

To raise motherhood to a professional level, Beecher wrote what was, in effect, the first book on home economics, *A Treatise on Domestic Economy for the Use of Young Ladies at Home and at School*. Published in 1841, the book was an immediate success and became the most important and widely read book of its kind. It was unique in that it was the first book ever to detail in a single volume every aspect of domestic life, including home construction and maintenance, cleaning, gardening, infant and child care, cooking, diet, health and hygiene, the fundamentals of first aid, nursing and healing the sick and all other responsibilities for keeping the family alive and well. The book offered complete explanations of all bodily functions and a myriad of suggestions on "the management of young children." It even included plans for a system of hot and cold running water and other innovations that represented the beginnings of household automation. Few homes did not depend on her book, and few communities did not welcome Beecher to lecture as an authority on home management and the role of women in American society.

With the evolution of the public school movement just before and after the Civil War, sewing and cooking were introduced as required courses for girls in public schools, and by 1880, with Beecher's book as a standard text, home economics appeared as a recognized course at public land-grant colleges. In 1914, Congress enacted the SMITH-LEVER ACT to subsidize adult education programs in agriculture and home

economics, and in 1917 Congress enacted the SMITH-HUGHES ACT to support agriculture, home economics and industrial education below the college level. After World War II and with the expanding role of women beyond the domestic arts, the home economics curriculum broadened to include the complex elements of home and family management and the professional aspects of the field outside the home.

Although elements of home economics are taught throughout the elementary school years, it does not appear as a formal, independent subject until the middle school and high school years. Usually unavailable in private schools, home economics courses remain under somewhat of an academic cloud because of their inclusion in the undemanding GENERAL EDUCATION curriculum, which focuses on nonacademic self-improvement courses and produces more than two-thirds of America's high school drop-outs. Because of its broad nature, home economics can limit its scope or offer in-depth studies of complex topics. In the general education track of many comprehensive high schools home economics is seldom more than a superficial and entertaining survey of consumerism, housekeeping, personal hygiene, human sexuality, child rearing and pop psychology. Many students admittedly take "home ec" in such schools to obtain "an easy grade." For that reason, perhaps, the number of boys taking elective home economics courses has soared in recent years, from 4.2% in 1968 to 41.5% in 1992. Another reason for increased male enrollment, however, has been the "degenderizing" of the subject with new names such as "Family Communications Skills," "Work and Family Studies," "Life-Management Education" and "Family and Consumer Sciences."

In contrast to general education, home economics courses at many vocational and comprehensive high schools are complex pre-professional or college preparatory courses for both boys and girls planning careers in home

economics or further study at the college and even the graduate school level. At the two-year or four-year college level, home economics courses provide preprofessional training in a wide variety of occupations, such as fashion or interior design, catering, institutional management, child development, dietetics, nutrition, cooking, and home economics teaching.

homeless children In education, the status of being without a legal residence, which, until 1987, rendered a child or youth legally ineligible to enroll in public schools in districts and states with specific residency requirements. In 1987, however, Congress passed the McKinney-Vento Homeless Assistance Act (subsequently reauthorized as part of the NO CHILD LEFT BEHIND ACT OF 2001), requiring states to ensure that every homeless child has equal access to the same public school education as other children.

There is a far greater variety, if not number, of homeless children than adults. Homeless children may be abandoned “throwaways,” orphaned children, runaways, victims of natural disasters such as hurricanes or earthquakes or victims of man-made disasters such as fires. They may also be children of homeless parents, migrant workers or transients who, for whatever reason, have no legal residence in a school district where local laws long made nonresident children ineligible to attend school. Although all 50 states have long had compulsory education laws, some specifically apply to only state residents. Passage of the federal McKinney-Vento Homeless Assistance Act aimed at eliminating such barriers by guaranteeing each homeless child access to the nearest public school and requiring public schools to eliminate all obstacles to the child’s education, such as requirements for previous school records, proof of residency, or lack of transportation. The law also forbids segregating homeless children from the rest of the school’s student body.

Granting homeless children access to public schools, however, is not the same as requiring their attendance, and, despite compulsory education laws, many agricultural states provide specific exemptions to children working for their parents in agriculture—an exemption dating back to the days when family farms dominated the economy of most states and few farmers could spare their children during planting and harvest seasons. Today’s growers, however, enlist adult migrant workers—almost always as independent contractors, who, in turn, depend on their children to help work the fields on a piecework basis to maximize family income. Such children seldom, if ever, seek access to nearby schools. Usually the children of poor immigrants, few such children have ever attended school on a regular basis, and few remain long enough to permit continuity in their education. Many appear at school ill-clothed, lacking social skills, unable to speak more than a few words of English and far behind their age-mates academically. Most require costly, specialized education. Parent/school cooperation is usually impossible because of lack of telephones or other means of communications in the family’s temporary living quarters.

Statistics for homelessness among children are as inaccurate as statistics for homelessness among adults. Various vested interests benefit from reporting total homelessness as low as possible (government, chambers of commerce and others who deny the scope of social ills) or as high as possible (public and private social welfare agencies and for-profit suppliers of housing, food and other materials). In 1990, total homelessness, for example, was reported variously from 200,000 to 5 million. The U.S. Census Bureau attempted to visit more than 10,000 shelters and 25,000 street sites to extrapolate the number of homeless and came up with a figure 228,621, but in 2000 the U.S. Department of Education estimated that there

were at least 220,000 homeless children in the United States, of whom more than 65,000 did not attend school regularly. In 2004, however, the National Law Center on Homelessness and Poverty estimated the number of homeless in the United States at 3.5 million, 1.35 million of them children.

Most such counts, however, are limited to people in soup kitchens or shelters or on the streets, so the method fails to include the homeless who find food and lodging elsewhere or, for whatever reasons, are unable to gain entry to or find shelters. Also skewing efforts to count the actual homeless are natural disasters such as the September 2005 hurricanes that left tens of thousands homeless in Louisiana and Mississippi—and untold numbers of children without access to schools.

home room A classroom where a specific group of students from the same grade meet each day with their assigned home-room teacher for administrative functions such as attendance taking, submission of student excuses for previous absences or tardiness, school announcements and collection of student monies for a variety of special purposes. The concept of the home room evolved following early 20th-century curricular differentiation in secondary schools, with students moving from room to room to study different subjects under teacher specialists. By grouping students from the same grade alphabetically in home-room classes at the beginning of the day, schools assure themselves that they can account for all students and present them with all school announcements.

The home room is unnecessary in most elementary schools, where students of each grade remain in one room most of the day for instruction by a single teacher generalist. In addition to its administrative purposes, home rooms also serve as opportunities for group and career guidance and other nonacademic

learning experiences. In secondary schools with heterogeneous populations, the home room permits students normally grouped by academic ability to gather for one period each day by grade and by alphabetical groupings within each grade.

home schooling The formal instruction of children in their homes instead of in school. A highly controversial practice, home schooling was the norm in the early 19th century, when most children went to work in the fields, mines or factories, sometimes beginning as young as five, six or seven years old. Before the existence of free public schools and universal public education, few parents could afford to send their children to so-called common schools, where they had to pay part of the costs of school maintenance, teacher's salaries, books and other materials. Except in the occasional, isolated rural or mountain area, home schooling all but disappeared in the United States until the 1970s, when nationwide desegregation of public schools provoked many southern white families who opposed racial integration either to send their children to all-white, private Christian academies or keep their children at home. Many chose the latter.

Another factor in the growth of home schooling was the failure of fundamentalist Protestant Christians, who believe in biblical inerrancy, to introduce biblical teachings into the public school curriculum. Rebuffed time after time by the U.S. Supreme Court, thousands of fundamentalists pulled their children out of public school systems in favor of home schooling. As a result, the last decades of the 20th and first years of the 21st centuries saw the number of home-schooled children soar from an estimated 10,000 to 15,000 in 1975 to between 1 million and 1.5 million in 2003, or more than 2% of the school-age population. And the number was increasing at an

astounding rate of 7% to 15% annually, depending on the region of the country.

The majority of home-schooled children come from white, two-parent, one-income families with three or more children. About half the families believe they can provide their children with better education at home, while 38% were motivated solely by religious beliefs. Many families cited the ban on prayer in public schools, the teaching of evolution and promotion of contraception in sex education as motivating their decisions to home school their children. About one-fourth also cite the poor learning environment, including exposure to violence, drugs and premature sex at school, as a motive for home schooling their children.

The registered number of home schoolers surged 10.1% in the 1999–2000 academic year in Colorado, following the previous spring's shootings at Columbine High School in Littleton, Colorado, where 12 students and a teacher died and almost two dozen others suffered wounds. Although few home schoolers identify themselves as such on standardized college entrance examinations, those that do invariably score 5% to 10% above the national averages. Advocates of home schooling say one reason for high test scores is the flexibility of the curriculum, which allows students to proceed at their own pace to the next level after they have mastered a topic instead of wasting time restudying material they already have mastered while slower children in formal classrooms try to catch up. No reliable data exists, however, comparing the academic achievement of home-schooled students with conventionally educated students. Existing figures compare only high-achieving home schoolers with a broad-based average of public-school students.

More than two-thirds of American colleges accept parent-prepared transcripts and portfolios in lieu of accredited high school diplomas, but religious colleges, which require few, if any, standardized admissions tests, draw a dis-

proportionate number of home schoolers, and the vast majority of home-schooled children come from Christian fundamentalist families opposed to secular education. For example, more than 10% of the students at Oral Roberts College, a Christian college in Tulsa, Oklahoma, are home schooled. Home schoolers come from families with average incomes ranging from \$40,000 to \$50,000, well below the median \$50,000 to \$60,000 for all American families with children in high school. Many Christian colleges, therefore, set aside scholarships for the home-schooled—about \$2,000 a year per home-schooled student at Oral Roberts and as much as \$12,000 a year at Nyack College, a Christian school in Nyack, New York. In 2000, evangelical Christian home schoolers opened a combined on-campus/on-line college in Purcellville, Virginia, exclusively for home-schooled students. Launched in conjunction with an advocacy group, the National Home School Legal Defense Association, Patrick Henry College refuses federal financial support and charges about \$15,000 a year for tuition. The all-white college claims that the average SAT score of its students is about 1320. Its core curriculum includes a semester of "biblical reasoning" and a course called "Foundations of Liberty," which teaches that biblical principles, traditional sex roles and limited government are fundamental to democracy. Patrick Henry College students must obey a strict moral code that forbids drinking and requires students to live in single-sex dormitories, wear their hair neatly and dress "modestly." A "courtship policy" requires male students to ask permission of the fathers or guardians of female students before courtship. On-campus male-female contacts are limited to holding hands, campus television blocks the reception of "racy" stations such as MTV and VH1, and "Covenant Eyes" software on all student computers monitors the Web sites students can visit.

Critics of home schooling contend that it isolates children ethnically and racially and deprives them of social skills. Moreover, they question the value of an education imparted by professionally untrained parent-teachers whose emotional ties to their offspring-students might open such students to abuse. Although all states allow home schooling, regulations vary widely from state to state. Ten states, including New Jersey and Texas, do not require parents to notify school officials that they are home schooling their children and require no record keeping of their children's progress. Fourteen states, including Alabama, California, and Wisconsin, plus the District of Columbia, require parents only to notify school authorities that they are home schooling their children—but little else. New York, Massachusetts, Pennsylvania and other states, in contrast, require regular standardized testing of home-schooled students and approval of the home-school curriculum. An attempt by Congress to require school districts to certify that all teachers are qualified to teach the subjects to which they are assigned was defeated by fundamentalist groups and home schooling advocates. The Home School Legal Defense Association fought and won a series of court and legislative victories that eliminated requirements in a number of states that home-school teachers have high school diplomas or college degrees and pass teacher certification tests. Texas, Kansas and Michigan went even further by passing laws establishing the "fundamental right" of parents to control the way their children are raised. To that end, 14 states passed laws requiring school districts to open extracurricular activities, including all sports, to home-schooled children in their districts—although such schools lose state aid when children leave to be home schooled and are no longer carried on school registries.

To counter the home schooling movement, states such as Oregon and Colorado have started encouraging home-schooled students

to reenroll in school to take courses in advanced subjects such as calculus and foreign languages or ADVANCED PLACEMENT courses that parents are unable to teach.

home/school partnerships The vaguely defined and problematic, cooperative effort of parents and guardians to help their children's schools achieve their educational goals. Making a clear definition of such partnerships difficult is the dilemma created by a system of universal public education governed by a citizen democracy in which parents and other citizens elect school boards to determine educational policies. Few school districts require any professional qualification—or even a literary test—for school board membership. No other nation has a similar system that permits the personal political, religious or moral beliefs of often uneducated and professionally unqualified parents and politicians to override professional considerations.

At the core of the dilemma is the extent of parental and community rights to determine the character of their children's education. Many parents do not believe that tax-supported schools should have the right to teach children truths that controvert the beliefs of their parents. Such parents see home/school partnerships as the active imposition of parental political, religious and moral beliefs on schools, through active participation in the school board election process.

Professional educators, on the other hand, favor home/school partnerships akin to those at the most selective private schools, which bar parents from interfering in school policy determination and limit their role to supporting school-dictated programs. Culled from a variety of private school handbooks for parents, such school-approved supportive efforts include: imposing behavioral controls on their children; limiting family and children's TV viewing; filling their homes with books and reading to their children; monitoring their

homework; ensuring that their children get enough sleep and a proper diet; enriching their children's cultural lives and supplementing their education by taking them to museums, concerts, theaters and a variety of other cultural attractions and events; supporting school and teacher demands for greater academic effort and not excusing poor academic performance because children say the work is too difficult; and not removing children from school for frivolous activities such as opening day of professional baseball or a family ski vacation.

homework Assigned academic work that students are expected to complete at home or during nonclass hours and return to the teacher within a specified time. Although always required by American private schools, homework has traditionally proved difficult to introduce in public schools, whose students are more apt to hold after-school jobs on which they and their families may depend economically and which leave the students too tired for homework when they return home. The advent of the computer has had little statistical impact on homework performance. In the 20 years from 1984 to 2004, the number of students who do no homework each night stayed constant at 22% to 24% among 13-year-olds (eighth graders) and increased among 17-year-olds (high school seniors) from 22% to 26%. In 1984, reading scores of both 13-year-olds and 17-year-olds who did more than one hour of homework each night were about 2% higher than those of students who did less than one hour; 20 years later, the differential edged upward only slightly to nearly 3%, despite access to the Internet in nearly 100% of American schools and the use of home computers by nearly 70% of all elementary and secondary school students.

homogeneous and heterogeneous groupings Two standard, though contrasting, meth-

ods of grouping students in courses and classrooms. Homogeneous groupings place students of similar intelligence, abilities and/or academic achievement in the same courses and classrooms. Depending on the number of students, homogeneous groupings might divide students into classes of slow, average and bright learners and even subdivisions thereof, to permit each group to proceed at its own pace. Homogeneous groupings have long been a center of controversy as a "self-fulfilling prophecy" that ensures slow students learning less than their faster counterparts because of reduced teacher demands and expectations.

In contrast, heterogeneous groupings, with students assigned randomly and each class expected to cover the same materials, often raise achievement levels of slower students who strive to compete with higher achievers. The use of heterogeneous groupings has increased substantially since the passage in 1975 of the EDUCATION FOR ALL HANDICAPPED CHILDREN ACT, mandating the admission into traditional classrooms and "mainstreaming" of a wide variety of intellectually, emotionally and physically handicapped students.

The introduction of COOPERATIVE LEARNING techniques in heterogeneously grouped classes has produced astonishing results for both slow and gifted learners. Cooperative learning involves careful grouping of students with complementary strengths and weaknesses into teams, whose student members interact much as they might on an athletic team, helping each other with problems and encouraging each other to learn and succeed. Gifted students often profit more academically by serving as role models for and teaching their slower peers than they do in homogeneous classes where they are simply "average." Slower students, on the other hand, often respond more positively to instruction from peers speaking in "youth talk" than they do to the more abstract approach of adult teachers. Heterogeneous groupings,

however, provide little of the opportunity—or incentive—for gifted students to progress at their own pace and engage in independent learning activities that homogeneous groupings provide.

(See also ABILITY GROUPING; TRACKING.)

honorary degree An unearned academic degree—usually a doctorate—conferred by an institution of higher education for reasons other than the completion of a specific course of study. The most common recipients of honorary degrees tend to be college and university presidents, university trustees, educators, scientists, military leaders, authors, artists, political leaders, major financial contributors to the college or university and any other public figure or celebrity whose presence at graduation ceremonies to receive such degrees will enhance the prestige of the institution. Conferring honorary degrees need have no relevance to the recipient's qualifications, and the degree itself, along with its title "doctor," confers no privileges upon its recipient. Indeed, of the 50,000-odd honorary degrees conferred in the United States each year, many are purchased outright by their recipients.

The most common honorary degrees are the honorary doctor of laws, doctor of humane letters, doctor of divinity, doctor of science and doctor of letters, all of which are professionally meaningless. As Mark Twain put it in accepting an honorary doctor of letters degree at Oxford University, "It pleased me beyond measure when Yale made me a master of Arts, because I didn't know anything about Art. I had another convulsion of pleasure when Harvard made me a Doctor of Literature, because I was not competent to doctor anybody's literature but my own. . . . I rejoiced again when Missouri University made me a Doctor of Laws, because it was all clear profit, I not knowing anything about laws except how to evade them and not get caught."

The award or sale of honorary degrees dates back to the 14th century, when Paris University sold theology degrees to would-be priests. Harvard College, the first college in the New World, was also first to confer honorary degrees—in 1692, when it conferred a doctor of sacred theology degree on its president, INCREASE MATHER, who was himself a graduate of Harvard with an earned degree. For many decades thereafter, the award of honorary degrees remained a serious process, with most honorees limited to academics and American presidents, although Harvard alumni, including John Quincy Adams, protested the award of an honorary doctor of laws degree to populist president Andrew Jackson. Told that he was expected to make his acceptance speech in Latin, the relatively unschooled "Dr." Jackson spoke the only Latin words he knew: "E pluribus unum, sine qua non, multum in parvo, quid pro quo, ne plus ultra."

As major colleges sought to expand into universities in the late 19th century, the award of honorary degrees to financiers, industrialists and other potential donors became so common a fund-raising technique that from 1870 to the beginning of World War I colleges awarded more honorary than earned degrees. Although the award of earned degrees now exceeds honorary degrees by about seven to one—38,000 to 5,000 in 1990—the practice of awarding honorary degrees to actual and potential financial donors has continued. In addition, colleges and universities continue routinely to grant degrees to political figures, often, as in the case of Harvard or Yale, because of tradition and just as often in an effort to obtain publicity and prestige. When the quest for publicity fails to produce famous honorees, some colleges turn to the infamous. Northwestern University once awarded an honorary degree to Charlie McCarthy, a popular ventriloquist's dummy of the 1940s and 1950s. Other colleges and universities have awarded thousands of honorary

degrees to comedians and actors, professional baseball and football stars, popular singers and dancers and a host of other nonacademics with few, if any, academic qualifications for such honors.

Occasionally, honorary degrees are awarded to those who have performed valuable services for a college or university—i.e., “friends” of the institution who may have been responsible for raising funds or obtaining gifts of land. Even in this area, ludicrous choices have often tarnished the value of such awards—as with one college’s award of a doctor of delectables to a longtime campus hot dog vendor and another school’s award of a doctor of canine fidelity to a seeing-eye dog.

honor code An all-but-obsolete conduct regulation whereby students pledged not to violate any school or college rules in or out of the classroom and agreed to report themselves or their schoolmates for any such violations. Once ubiquitous at independent boarding schools and private colleges, the honor code usually required a student signature on each piece of school work, usually with a code word such as “Pledge” to indicate the student’s vow that “On my honor, I pledge that I have neither given nor received aid” in preparing this examination, homework and so forth. The honor code expected students to report each other as well as themselves for cheating in the classroom. The code also applied to conduct outside the classroom and, at some schools, even to conduct outside the school on weekends and during school vacations. Violation of the honor code resulted in stiff penalties such as restriction to one’s room, suspension from school or even expulsion. In theory, the honor code allowed a teacher to leave students unsupervised in classrooms while they took examinations and, in effect, unsupervised during non-class periods. The code proved self-defeating at many schools by encouraging students

to report themselves even when there were no witnesses to the transgression, and then punishing them for the transgression while seldom rewarding them for being truthful.

honor roll A periodic listing of students with the highest GRADE POINT averages for the preceding marking period. Often called the dean’s list, the honor roll may restrict its listings according to a wide variety of standards. It may, for example, restrict honorees to a specific percentage of the class—the top 10%, for example—or a specific number such as the highest three, four or five students. It may require honorees to achieve a minimum grade-point average, in addition to or regardless of specific class ranking. Some honor roll restrictions require minimum grade-point averages made up of individual grades above a certain level—a minimum GPA of 3.8, for example, with no individual grades below 3.0.

honors courses A group of secondary school courses reserved for the highest academic achievers. Usually limited to subjects required for entrance to four-year colleges, honors courses cover the same materials as conventional courses, but in greater depth, breadth and degree of complexity and difficulty. Enrollment in each course is usually limited to college-bound students with high previous grades in that subject and high scores on standardized achievement, aptitude and intelligence tests. The honors program at most public high schools includes English, mathematics, history, the natural sciences and modern languages, and is usually a track (see TRACKING) within a track, dividing students within the broad academic program into those planning to apply to four-year colleges and those planning to attend two-year colleges or enter the job market.

honor society Any Greek-letter or similar society whose membership is based on academic

achievement in higher education. The oldest and most prestigious honor society in the United States is PHI BETA KAPPA, which limits membership to juniors who rank in the top 7.5% of their college classes and seniors in the top 10%. Phi Beta Kappa considers factors other than academics, however, thus limiting the number of annual new members to about 30,000. Other honor societies include the following:

- Alpha Lambda Delta: merged with Phi Eta Sigma and accepts freshmen in the top 20% of their class with at least a 3.5 grade point average.
- Gamma Beta Phi: accepts the top 10% to 20% of upperclassmen or students with a 3.25 GPA.
- Golden Key: accepts the top 15% of the class.
- Mortar Board: accepts the top 15% of the class.
- The National Society of Collegiate Scholars: accepts the top 20% of the class, or students with a 3.4 GPA
- Phi Kappa Phi: accepts the top 7.5% of juniors and 10% of seniors.

hornbook The earliest form of children's primer in the American colonies, consisting of a sheet of parchment or paper protected by a sheet of transparent horn, or a clear, plastic-like sheet, which were glued together onto a paddle-shaped wooden tablet for easy grasping. European hornbooks dating back to 1450 were often two-sided and usually displayed the alphabet and the most common syllables. Hornbooks for older children often contained prayers and religious quotations that children were expected to memorize.

hospitals In education, institutions not only for treating the sick and injured but also for medical research and the training and education of future physicians, surgeons and health practitioners. The hospital as an institution for research and instruction as well as for the delivery of medical services dates back to 1884, when WILLIAM HENRY WELCH, a professor of

pathology and anatomy at the Bellevue Hospital Medical College in New York, was named professor of pathology at JOHNS HOPKINS UNIVERSITY. At the time, medical education consisted of one to three years of lectures and study at propriety medical schools organized and staffed by local practitioners.

Welch developed a new, four-year medical curriculum—the first in the United States—that consisted of laboratory study of preclinical subjects including anatomy, physiology, pharmacology and pathology, followed by two years of in-hospital study of the clinical subjects of medicine, surgery and obstetrics. To that end, Welch was instrumental in founding the Johns Hopkins Hospital in 1889 and the Medical School in 1893, where he served as the first dean. He linked the two institutions by recruiting such distinguished physician/researchers as Sir William Osler (1849–1919) and renowned surgeon William S. Halsted (1852–1922) to staff both institutions. He thus made the hospital's first great physician/teachers central to the life of the medical school, but made the medical school's laboratory and library facilities equally central to the research needs of the hospital and its physicians.

Welch strengthened those ties even more by creating an appointment system that made professors in the medical school serve as heads of their departments in the hospital, thus making them responsible for delivery of medical services as well as the organization of medical instruction. Their combined duties led to their integrating advanced medical education with practical hospital routine, as they led their students on daily rounds of hospital wards, translating student textbook and laboratory knowledge into actuality. As JOHN SHAW BILLINGS, the physician who had drawn up the plans for the hospital explained it, "The sooner [the student] can begin to profitably receive instruction by the bedside of the sick, or rather

to instruct himself there, the better. Nothing can take the place of this; if it not be obtained afterward at the expense of the first patients who present themselves."

The teaching standards and methods established at Johns Hopkins—and the four-year medical degree—made it a model for teaching hospitals that sprang up in major cities across the United States. By the end of World War II, with the emergence of new types of health services, the hospital's role as an educational center had expanded to include instruction in nursing, rehabilitation, pharmacy, clinical psychology, public health work, hospital social work and hospital administration.

household The basic unit of social organization and education in the American colonies and in the United States until the Civil War. To the arriving Puritans, the household had been "the basic unit of church and commonwealth and, ultimately, the nursery of sainthood" from Elizabethan times. Although churches, schools, colleges and other institutions had emerged to share the educative task in metropolitan areas of England, the threat of barbarism in the isolation of the American wilderness once again made the household responsible for almost all education. In 1642, Massachusetts codified that responsibility, giving every town the power and obligation "to take account from time to time of all parents and masters, and of their children, concerning their calling and employment of their children, especially of their ability to read and understand the principles of religion and the capital laws of this country." Failure to teach their children to read and write, to read Scripture and to ply a useful trade by the time their children were 12 subjected parents to the loss of their children, whom the government would then place into enforced apprenticeships. Connecticut passed a similar law in 1650, New Haven in 1655, New York in 1665, Plymouth in 1671 and Pennsylvania in

1683. The net result was that most households were scenes of daily formal and informal education. Individual reading, responsive reading and communal readings were daily activities of most colonial households, and youngsters were taught to read by parents, other elders or older siblings. Youngsters in homes where no one knew how to read simply went to a neighboring home or so-called *DAME SCHOOL*, where, for a fee, a mother or older sister taught reading on a regular basis.

The colonial household remained the principal agency of popular education until communities grew large and wealthy enough to afford a church, whose pastor, as perhaps the only formally educated member of the community, then assumed the obligation of educating the community's children. The emergence of public schools during the second half of the 19th century eventually stripped the church of its educative functions.

Howard University The largest predominantly African-American university in the United States. Established in Washington, D.C., in 1867, Howard was one of three black colleges founded independently of northern white mission societies. Aware of the intellectual potential of Washington-area freedmen who had worked for congressmen, judges and other powerful, well-educated Washingtonians, a group of 10 members of the First Congregational Society of Washington founded the Howard Normal and Theological Institute for the Education of Teachers and Preachers, who, they hoped, would serve as leaders of their race.

Among the founding group was Gen. Oliver Otis Howard (1830–1909), the head of the Freedmen's Bureau, which Congress created to provide a broad range of assistance to former slaves in the South after the Civil War. By giving the college his name and appointing him its first president, the trustees assured the college a congressional charter and annual finan-



Howard University campus and students in 1946 (*Time Life Pictures/Getty Images*)

cial support from the Freedmen's Bureau. Gen. Howard's service at the college ended with the halting of the bureau's financial support in 1873, but six years later, the school won congressional authorization for an annual federal government subsidy, which continues to this day. (Gen. Howard went on to win notoriety for leading and almost losing the treacherous campaign against Chief Joseph and the Nez Percé in the West.)

An academically demanding school with a mission different from other, vocationally oriented black colleges, Howard attracted the outstanding black scholars of the time. By the mid-1930s, it had become a center of black culture, with a law school and medical school and such teachers as future statesman and Nobel laureate Ralph Bunche. Its students included

THURGOOD MARSHALL, future U.S. Supreme Court justice who became the legal strategist for the landmark *BROWN V. BOARD OF EDUCATION OF TOPEKA* case that would end racial segregation of American public schools. In all, Howard has trained approximately 40,000 black professionals. Howard has six undergraduate schools, with more than 7,000 students, and 11 graduate schools, with about 3,600 students. About 86% of students are African-American, and about two-thirds are women.

Hull-House The second and most famous of the more than 400 settlement houses that sprouted in city slums across the United States between 1890 and 1910. Founded in the Chicago slums in 1889 by social reformer JANE ADDAMS and a college classmate, Ellen Gates Starr (1868–1940), Hull-House initially housed college-educated women bent on bringing the advantages of college education to working-class people. Hoping that such education would help lift the poor out of the slums and to better lives, the Hull-House workers arranged art exhibits, university extension classes, a summer school, cooking and sewing classes, Sunday concerts and special lectures. They also sought to aid the foreign-born to become Americanized by conducting language and citizenship classes and organizing a day nursery and kindergarten that freed mothers to go to work. Hull-House also operated a free health clinic, and it put together a Labor Museum that taught young immigrants a respect for the labor movement and the accomplishments of their predecessor immigrants.

To combat the degradation of children, Hull-House organized public rallies on behalf of compulsory, universal public education, an end to child labor and the construction of more public libraries, parks, playgrounds and schools. Hull-House also organized a free kindergarten, day nursery and health clinic. It gradually expanded its plant to include 13

buildings housing day care programs, a gymnasium, meeting and recreation rooms for youngsters and adults, arts-and-crafts workshops, classrooms for adult education, a music school, a theater for amateur dramatic performances, a social service center, a kindergarten and nursery school and a health clinic. As times and social problems changed, so did Hull-House services. By the 1960s, it was serving troubled youth and, a decade later, senior citizens.

humanistic education An approach to instruction vaguely (and arguably) defined as emphasizing the social and psychological as well as intellectual development of the student. The pedagogy of humanistic education usually includes evocation, both in and out of the classroom, of student feelings, along with the teaching of cooperation with, concern for and acceptance of others and the development of warm, interpersonal relationships. Depending on one's definition, almost all renowned non-didactic educators, from Aristotle to John Dewey, may be said to have been somewhat humanistic in their approach to education.

humanities Those formal courses dealing with human thoughts and feelings rather than natural processes. Courses traditionally included in the humanities are literature, languages, history, music, art and philosophy. Often called the LIBERAL ARTS, the humanities generally do not include empirical sciences such as physics, chemistry or biology, although their exclusion becomes somewhat difficult when, for example, the fine arts such as sculpture or architecture reach into mathematics or physics. In the strictest sense, however, those colleges and universities offering degrees in the humanities limit studies to five areas: literature, history, fine art, music and philosophy.

Hunter College New York City's first "normal," or teacher-training, college. Founded in

1870, when only 12% of American school-teachers were women, the Normal College of the City of New York, as it was called, was one of dozens of women's colleges opening across the United States to fill the need for teachers. The end of the Civil War had seen almost every state join the burgeoning "public school movement" by passing public education laws and building public schools in every town and hamlet. But the vast expansion of industry was absorbing most young men into jobs that paid far more than teaching, and women were forced to fill the vacuum. Within 10 years after Hunter and other teachers' colleges had opened, the percentage of women school-teachers more than doubled, to 66% of all teachers.

Between World Wars I and II, Hunter, Brooklyn and Queens colleges joined the already public City College in Manhattan to form an expanded public system of higher education, which, after the end of World War II, expanded into what is now the huge City University of New York. Now a comprehensive, nonresidential coeducational college with nearly 21,000 students enrolled in 3 undergraduate and 4 graduate schools, Hunter continues to offer a program leading to a bachelor's degree in education.

Hunter Model A formal codification of the teaching process for elementary and secondary school education. Drawn from a myriad of learning theories, the Hunter Model was devised in 1980 by contemporary California educator/psychologist Madeline Hunter, who pulled together and ordered all elements of the learning process into a short, easy-to-learn, logical sequence that teachers can use to improve their teaching techniques. The model was taught routinely during in-service training of tens of thousands of teachers during the 1980s, and despite occasional modification it continues to influence American pedagogy.

The model breaks teaching down into these nine elements:

1. Diagnosis: Identifying the student's current level of achievement in a subject area.
2. Specific objective: Selection of a clearly stated goal or goals for a particular lesson.
3. Anticipatory set: Focusing the student's attention in preparation for the lesson.
4. Perceived purpose: Explaining the objective to students and ensuring their understanding.
5. Learning opportunities: Selection of activities and materials to help achieve the lesson objectives.
6. Modeling: The presentation of verbal and visual examples to reinforce the lesson.
7. Check for understanding: Determining how well the lesson objectives have been achieved.
8. Guided practice: Guiding and monitoring student practice.
9. Independent practice: Creation of opportunities for additional student practice (homework, for example) free of teacher guidance.

Hutchins, Robert Maynard (1899–1977)

American educator, educational innovator and champion of the traditional classical education based on careful study of the great books of the Western tradition.

Born in Brooklyn, Hutchins earned a law degree from Yale following service in the U.S. Army during World War I. By 1928, he had been named dean of the Yale Law School and, in 1929, at the age of 30, president of the UNIVERSITY OF CHICAGO. Fervent in the belief that a university should inspire youthful passion for learning and independent thought, Hutchins opened Chicago to high school juniors, letting some graduate after only two years if they qualified. Hutchins abolished the course credit system and compulsory class attendance. Instead, each student, regardless of age, could progress whenever he thought he was ready and could successfully pass a comprehensive examination.

Although “radical,” in the sense of giving students independence to pursue knowledge at their own pace, Hutchins was nevertheless a conservative in that he believed strongly that all Americans should be schooled in the classic disciplines of grammar, rhetoric, logic, mathematics and the great books of the Western world. He railed against so-called frontier thinkers who favored abandoning classical education in favor of utilitarian and humanitarian courses they deemed more relevant to modern life. “Education,” said Hutchins, “implies teaching. Teaching implies knowledge. Knowledge is truth. Truth is everywhere the same.” With the help of his friend and



Robert Maynard Hutchins (*Library of Congress*)

presidential assistant, philosophy professor Mortimer J. Adler, Hutchins reorganized the curriculum at the university, abolishing football and changing the curriculum to emphasize reading and discussion of the classics of Western tradition.

At the same time, he and Adler founded the Great Books Foundation to produce a series of books containing classical works of literature, poetry and essays. The series was designed to provide a fundamental education for adults who, because of the Great Depression of the 1930s and World War II, might have been deprived of secondary school education and all exposure to the classics. The foundation also produced training guides for discussion leaders to organize subscribers into discussion groups.

Scorned by the educational left as out-of-date and by the right as an obsessive intellectual who did not appreciate the value of football, Hutchins and his philosophy of education fell into disfavor until after World War II, when evidence mounted that public school and college education had deteriorated badly. A growing "BACK-TO-BASICS" movement led by Adler and based on the Hutchins philosophy gradually reintroduced many of the elements of the classical disciplines of grammar and mathematics into the curricula at almost every level of education.

Hutchins left Chicago in 1951 to become associate director of the FORD FOUNDATION, and in 1952 he and Adler produced and edited the 54-volume Great Books of the Western World, which provided libraries, schools and individual families with what the two educators considered the collected wisdom of the ages. By the early 1960s, the Great Books Foundation had saturated the market with its encyclopedic collection and began to produce short series of paperbacks, with short stories, poetry,

essays and other works designed for students—especially gifted students—from second grade through high school.

Hutchins also served as chairman of the board of editors of *Encyclopaedia Britannica* from 1943 to 1946, and as president of the Fund for the Republic and the Center for the Study of Democratic Institutions, both of them part of the Ford Foundation. He was the author of a number of classic works on education, including *No Friendly Voice* and *The Higher Learning in America*, both of which caused a stir in American education when published in 1936. His other important works include *The Conflict in Education* (1953), *University of Utopia* (1953), *Great Books*, *The Foundation of a Liberal Education* (1954), *Some Observations on American Education* (1956), *Education for Freedom* (1963), and *Education: The Learning Society* (1968).

(See also GREAT BOOKS PROGRAM.)

hyperactivity/hyperkinesis Two equally applicable designations for a syndrome that includes excessive, impulse-driven activity, short attention span, high distractibility, social immaturity, inappropriate lack of inhibitions and learning difficulties usually requiring special education. None of these symptoms by itself, including ATTENTION DEFICIT DISORDER, is necessarily an indication of hyperactivity/hyperkinesis. Usually the result of a brain dysfunction, hyperactivity/hyperkinesis may be developmental and, therefore, temporary. If permanent, it requires long-term, individually prescribed educational and, perhaps, medical intervention. Regardless of the cause and treatment, hyperactivity/hyperkinesis is usually identifiable in early childhood, before the child begins school. If untreated, hyperactive/hyperkinetic children tend to be disruptive in class and other school routines.

Idaho The 43rd state admitted to the Union, in 1890. Established in 1865, the state's public school system registered dramatic gains in academic quality during the first five years of the 21st century, with average achievement of high school students jumping from the bottom 20% in the nation to above average for the United States, while 2005 test scores of elementary school students ranked them 18th in the nation in reading proficiency and 10th in the nation in mathematics proficiency. One factor in the improvement in student performance may have been the 17.3% jump in teacher salaries. Although average teacher salaries remain more than 11% below the national average, Idaho's lower cost of living put most teachers in substantially improved economic circumstances. The state's public school enrollment of just under 250,000 remained relatively unchanged from 2000 to 2005, although the percentage of minority students increased from 13% to 14.6%—an increase of more than 12%, or more than 30,000 students. The poverty rate among Idaho's public-school students also dropped dramatically, from more than 20% in 2000 to 13.1%—below the national average of 15.1%—and undoubtedly a factor in the elevation of overall academic achievement in the state's public schools. The state has four public and six private four-year institutions of higher education and three public and one private two-year colleges, with a total college and uni-

versity enrollment of about 72,000 students but a low graduation rate of only 43%.

"I Have a Dream" Foundation A unique organization that provides educational and social support services to inner-city children whose classes have been "adopted" educationally by corporations and wealthy individuals. Founded in 1981 by New York businessman Eugene Lang, the program involves thousands of students in cities across the United States, where sponsors agree to "adopt a class" and pledge to pay the college expenses of every student who avoids dropping out and graduates from high school.

Lang came up with the idea following his visit to the grade school he had attended as a child, in an all-white, lower-middle-income neighborhood that had subsequently deteriorated into a black and Puerto Rican slum. Speaking to sixth graders of how education had helped him succeed, he promised to pay the college expenses for every student in the class who went on to graduate from high school. Lang's program caused an immediate sensation. Within a decade, companies and individuals had "adopted" more than 12,000 students in 54 cities. Lang realized that many of his "adopted" students would require special tutoring, the services of social workers and occasional health care to fulfill their goals, and he started the I Have a Dream Foundation to

provide such services, for sponsors agree to cover all costs.

Illinois The 21st state admitted to the Union, in 1818. The state has more than 4,350 public elementary and secondary schools, and academic achievement of the nearly 2.1 million students is just about average for the nation. More than 40% are minority students, 15.3% live in poverty and one-third of all students fail to meet basic proficiency levels in reading, writing and mathematics. The state has more than 170 institutions of higher education, including 12 public and 98 private four-year colleges and 48 public and 15 private two-year institutions. The state's 650,000 undergraduates have a graduation rate of 58%—well above the national average. Among the state's most notable institutions are the American Conservatory of Music, the University of Chicago, Northwestern University, DePaul University, Loyola University, the University of Illinois in Urbana-Champaign, Southern Illinois University at Carbondale and Wheaton College. The state's first college, Illinois College in Jacksonville, was founded by missionaries in 1829.

illiteracy An inability to read or write; according to the national Adult Literacy Survey released in the 1990s, between 21% and 23% of the adult citizens of the United States are affected. The high rate has developed despite continually rising expenditures for education generally and for adult-literacy programs specifically. Pure illiteracy—a total inability to read or write a single word—is rare among all but the severely mentally handicapped or the totally uneducated. About 3.5% of the documented American population over 18 falls into this category, according to the Department of Education. Far more common—but no less debilitating—is so-called FUNCTIONAL ILLITERACY—an inability to read and write well enough to function efficiently in the home, workplace

and community. The U.S. Department of Education's Adult Literacy Survey measures three types of functional literacy of adults 16 or over—"prose literacy," "document literacy" and "quantitative literacy." Its survey in the 1990s found 21% of adults at the lowest level of prose literacy, that is, unable to write a simple description of the type of job they would like to have and able to do no more than locate a single piece of information in a short, simple text. It found 23% at the lowest level of document literacy and, thus, unable to locate and use information from documents such as indexes, tables, paycheck stubs and order forms or even match money-saving coupons to a shopping list of several items. About 22% of the American population scored at the lowest levels of quantitative literacy, which required them to perform single, relatively simple numerical and arithmetic operations of daily life, such as adding two entries on a bank deposit slip. Rates varied widely according to age, race, ethnicity and levels of education. Only about 15% of whites demonstrated the lowest levels of literacy, while 40% of blacks were functionally illiterate and 46% functionally innumerate. Well over 50% of Hispanics were functionally illiterate and innumerate. About 75% of those who had dropped out of school before attending high school were functionally illiterate and innumerate, and about 45% of those who dropped out after entering but before completing high school were functionally illiterate and innumerate.

One reason for the high rates of functional illiteracy was the growing number of children and adults whose first language is not English. By 2007, an avalanche of immigrants—11 million of them illegal immigrants from impoverished developing nations—had surged across U.S. borders. More than 12% had arrived with no previous schooling, and, depending on their ages, between 10% to 20% were functionally illiterate, although there is almost no way

to document the degree of illiteracy among the illegals. Because the Adult Literacy Survey is given in English only, it does not determine whether non-English-speaking test takers might be literate in their native languages. The most important reason for high illiteracy rates among the American-born, however, was poor education. A 1992 "Reading Report Card for the Nation and States" by the U.S. Department of Education found more than two-thirds of U.S. children unable to read up to their appropriate grade levels. By 1999, tests administered under the Department of Education's NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS program found that reading proficiency of fourth-, eighth- and twelfth-graders had remained absolutely unchanged during the previous seven years—not even by a fraction of a point.

The Adult Literacy Survey was commissioned by the U.S. Department of Education and conducted by the EDUCATIONAL TESTING SERVICE, which administers the SCHOLASTIC ASSESSMENT TESTS used as an admission test by many American colleges. The Literacy Survey tested 25,000 randomly selected Americans above the age of 15. Questions are purposely related to practical matters that people face every day, such as obtaining information from newspapers, reading bus schedules, filling out bank deposit slips and understanding instructions for prospective jurors. The study draws no conclusions about intelligence, limiting its task to assessing reading skills needed for the workplace and for civic activities such as voting and jury service.

The survey test measured three areas of literacy and numeracy: reading comprehension, filling out documents and answering questions requiring simple arithmetic. The test had five levels of proficiency, with questions in each level weighted according to difficulty. The survey found that more than 21% of test-takers performed at the lowest level—that is, they were unable to calculate the total of a purchase,

determine the difference in price between two items, locate a particular intersection on a street map, locate a single piece of information in a written passage, or enter personal background information on a simple job application.

Another 20% were unable to answer a specific question about facts in a newspaper story or write a paragraph summarizing information from a chart about schools. About 32% functioned with middle-level skills and were able to write a brief letter explaining about a billing error and to read an article and provide two facts that support an inference in the article. About 17% functioned at the next level, which required respondents to integrate information from complex passages of writing, and only 3% functioned at the highest level, requiring a search for specific information in dense text with a number of distractors.

The majority of whites scored in the three highest levels, and whites also outscored blacks, Asians and Hispanics in the three literacy areas. A majority of Hispanic and Asian adults who scored in the lowest level were born outside the United States. Low scores by blacks were attributed to the poor quality of public schools in black areas. The survey found that older people tended to have lower scores and that scores generally correlated directly with income. Those with the lowest scores earned the lowest median incomes, while those with the highest scores earned almost three times more.

American industry estimates that errors and accidents attributable to illiteracy cause between \$25 billion and \$35 billion a year in productivity losses. The National Alliance of Business, a group of 3,000 companies engaged in training and education issues, estimates that only about 25% of the adult American population is "highly literate." The federal government provides between \$250 million and \$300 million annually for adult literacy programs in public schools, and many labor-intensive

businesses have started literacy programs of their own for their employees.

Adult illiteracy is closely tied to poor elementary and secondary school education, and it is doubtful if post-secondary literacy education can have any impact on the problem without substantial improvement in public school reading programs. The U.S. Department of Education's annual "Reading Report Card for the Nation and the States" in 1992 found that 25% of high school seniors (17-year-olds), nearly 31% of eighth graders (13-year-olds) and 41% of fourth graders (nine-year-olds) who were tested read so badly that they could not understand passages or stories designed for easy understanding by students at their grade levels. A large minority of the 140,000 students tested could not even grasp the meaning of what they read. More than a decade later in 2005, the average reading scores of fourth and eighth graders in 36 states and the District of Columbia had shown "no significant increase," according to the U.S. Department of Education. Reading achievement by both fourth graders (nine-year-olds) and eighth graders (13-year-olds) climbed only two points each, to average scores of 217 and 260, respectively. Thirty-six percent of fourth graders and 27% of eighth graders scored below basic levels, defined by the Department of Education as "able to follow brief written directions and carry out simple . . . reading tasks." Only 31% of students in both grades scored at or above levels demonstrating reading proficiency.

Since 1984, the Department of Education has attempted to analyze the basis of score differences. It found, for example, that higher-scoring students had teachers who emphasized reading literature over workbook exercises and that they engaged in discussions with friends and family at least weekly. Students who watched more than six hours of TELEVISION a day had significantly lower reading scores than students who watched less than one hour.

About 20% of fourth graders and 14% of eighth graders watched six or more hours of television daily. About 36% of eighth and 47% of twelfth graders say they hardly ever read for pleasure; 16% admit to never reading at all. Twenty-four percent of eighth graders and 26% of twelfth graders do no homework; 37% of eighth graders and 26% of twelfth graders do less than an hour of homework each night.

illumination levels The number of foot-candles, or degrees of light intensity, suggested by the American Institute of Architects for proper lighting in different areas of a school and for different types of activities. In general, the standards call for 30 to 50 foot-candles in classrooms, libraries, study halls, offices and workshops; 60 to 80 foot-candles for special education classes, drafting, typing and sewing; 20 to 30 foot-candles for physical education and reception rooms; 15 to 25 foot-candles for auditoria, cafeterias and general service rooms; and 15 to 20 foot-candles for open corridors and storerooms. One foot-candle equals the uniform level of illuminance of a steadily burning candle on a surface one foot away. Actual illumination levels may vary from accepted standards according to specific needs of handicapped students, teachers or staff members.

immersion A foreign-language teaching technique that dispenses with translation and forces students, from their first day, to hear and speak nothing (and see no words) other than the language under study. Based on language-learning processes of preliterate infants and young children, immersion uses a visual-audio-lingual approach, beginning first with a teacher simply presenting, then repeating aloud, the names of a number of familiar objects—for example, a pencil, paper, pen, book and table—and eliciting, after each repetition, the name from the student along with appropriate article. Gradually, with exaggerated motions, the

teacher expands student vocabularies, then uses student visual recognition of motions and positions to teach verbs, adverbs, adjectives and sentences the same way—by saying and repeating sentences in the foreign language: “The book is on the table”; “the book is under the table”; “the big book is on the table”; “the small book is on the table”; and so on. The teacher constantly elicits repetitions from the students, always correcting in the language under study and never translating.

Ample use of pictures, diagrams and teacher demonstrations lies at the heart of the technique. Reading and writing skills are usually not taught until student speaking and understanding skills have reached those of four- to five-year-olds. Originally developed by the federal government for military occupation forces during and after World War II, immersion techniques were perfected and used by the for-profit Berlitz School of Languages in the postwar era to teach tens of thousands of Americans and Europeans to speak each others’ languages and, in turn, strengthen cultural and commercial ties.

Several hundred American elementary schools carry the immersion principle to an extreme by teaching all students a foreign language (usually Spanish), beginning in kindergarten and first grade by conducting the entire day’s studies and activities in the foreign language. Their approach is based on the theory that foreign languages are easiest to learn at a young age, when a lack of inhibitions makes pronouncing (and mispronouncing) strange words and sounds fun and produces little or no embarrassment. Moreover, because of constant exposure to English outside school, children do not lose command of their native tongue during the three to six years of foreign-language immersion.

Failure of Americans to study and learn foreign languages has, for decades, been seen as a disadvantage for American industry in foreign commerce. Few students in Europe, Asia

and Africa emerge from secondary school without being fluent in two and often as many as four languages. Until the mid-1990s, only about one-third of American secondary school students studied any foreign language—usually for only three years. Since then, interest in foreign languages has increased dramatically, perhaps reflecting increased travel abroad, an increase in enrollment of foreign-born students, television’s ability to transmit the drama and degree of American involvement in foreign affairs and the Internet’s ability to take computer users on “virtual tours” almost anywhere in the world. Whatever the reasons, enrollment in foreign-language studies in public high schools has increased dramatically since 1976, and, by 2000, nearly half of all high school students in America were studying one or more foreign languages. Nearly half were studying Spanish, nearly 10% French and 3% German.

(See also BILINGUAL EDUCATION; FOREIGN-LANGUAGE STUDY.)

immigration See AMERICANIZATION.

immunization A process of rendering people immune to various infectious and contagious diseases by inoculating them with preventive vaccines. Federal government programs providing funds and, where necessary, vaccines to render schoolchildren immune to childhood and other diseases have all but wiped out the incidence of smallpox, poliomyelitis, tuberculosis, measles and other once-common diseases. Many states have laws prohibiting school enrollment of children without certificates of immunization against specified diseases, and many colleges and universities have similar rules. The lack of universality stems from a variety of causes, including religious objections and difficulty of enforcement in areas with large transient or immigrant populations.

impacted areas program A program that provides federal funding for construction of essential services, such as schools, in areas whose economies have been hurt by the presence of a military installation. Non-taxpaying military installations often bring additional school-aged children to a community whose local taxpayers cannot afford to pay the costs of expanded educational facilities to accommodate military dependents. To avoid "impacting" the economy of such communities, Congress passed the LANHAM COMMUNITY FACILITIES ACT in 1941, when the government began building hundreds of new military bases across the United States to train service personnel in anticipation of entering World War II. Two special-purpose laws were enacted in 1950 to extend the reach of the Lanham Act and provide one-time grants to school districts that were forced to expand facilities to accommodate large numbers of children whose parents (civilian as well as military) lived and worked on federal or federally related facilities and were exempt from local school taxes. Public Law 815 provided construction funds to expand schools for this purpose, and Public Law 874 provided funds for the expansion of educational programs in existing schools.

Improving America's Schools Act A 1994 federal law that renewed and revamped the ELEMENTARY AND SECONDARY EDUCATION ACT OF 1965. The new law added the federal government's largest program for educational assistance to disadvantaged children—Title I—and a broad range of professional development and technical assistance programs. The act also provided financial aid to communities to guarantee safe and drug-free schools and to make the sale of drugs and weapons in the vicinity of any school a federal crime.

independent school A privately operated, not-for-profit primary or secondary school

unaffiliated with any church or government agency. The term *independent school* is not synonymous with *PRIVATE SCHOOL*. Of the more than 121,000 schools in the United States, more than 27,000, or about 22.5%, are private, but the vast majority are PAROCHIAL SCHOOLS operated by religious organizations and churches. Only about 1,200 are unaffiliated, or "independent." As a group, independent schools tend to be the strongest, most academically demanding schools in the United States. Usually identified by their membership in the National Association of Independent Schools and by accreditation by regional ACCREDITATION ASSOCIATIONS, independent schools require students to do an average of 10.7 hours of homework a week, compared with 6.4 hours in other private schools, 6.3 hours in religious schools and 5.4 hours in public schools. Independent school students as a group do 2.2 hours of outside, nonschool reading per week, compared to only 1.8 hours for public school students, and they watch only 14.1 hours of television a week, compared with 21.7 hours a week for the average public school student. Independent boarding schools, which tend to have the highest academic standards of any group of schools in the United States, limit student exposure to television to about two hours a week of carefully monitored programming.

The results of these disciplines are evident in U.S. Department of Education studies, which found 68% of eighth grade students in independent schools achieving at the highest level of reading proficiency, compared with only 50% of eighth graders at all other private schools, 44% of eighth graders in church-affiliated schools and 32% of eighth graders in public schools. Some 63% of eighth graders in independent schools achieved at the highest level of proficiency in mathematics, compared to 34% in all other private schools, 19% in religious schools and 18% in public schools. Nearly all the eighth graders in independent

schools are enrolled in science courses with laboratory work, compared to only 21.5% in public schools. Private schools spend \$36.54 per pupil on library and media facilities, including computer hardware and software, CD-ROMs and on-line data base search engines and communications. Public schools spend half that amount—\$17.18 per pupil. Student-teacher ratios in independent schools average 9.3 pupils per teacher, compared to an average of 17.2 in public schools and well over 20 in religious schools.

With fewer than 2% of all schoolchildren in the United States, independent schools fill a disproportionately higher number of seats (often 20% or more) at the most selective colleges and tend to enroll twice as many children from upper-income families as private schools generally. Independent schools also tend to be less racially segregated or socially elite than many public schools, whose students are limited to those in immediate, often uniraical neighborhoods or school districts. About 13% of the student population at independent schools are students of color, and more than 2% of students come from foreign countries.

With costs ranging as high as \$20,000 or more a year at some independent day schools and \$30,000 a year at independent boarding schools, independent schools tend to draw educationally motivated students from educationally motivated families. Most independent schools have strict rules of behavior and, often, of dress. The vast majority do not accept learning-disabled students, and an even smaller number accept emotionally troubled students. Because they are private in every sense, they are academically selective and reserve the right to expel any student who do not adapt to the school's particular regimen. Unlike public schools, independent schools seldom require teachers to have degrees in education. Rather, most insist on degrees (usually advanced degrees) in the subjects teachers teach.

Independent School Entrance Exam (ISEE)

A standardized battery of tests used by several hundred private, American INDEPENDENT SCHOOLS to test verbal reasoning, quantitative reasoning, reading comprehension, mathematics proficiency and writing skills. A separate battery of tests is administered to each of three age groups—a lower-level examination for students in fourth or fifth grades, a middle-level exam for students in sixth or seventh grades, and an upper-level exam for students in eighth through twelfth grades. The upper-level exam is divided into five parts, the first four of which consist of 20 to 40 minutes each of objective questions and the fifth being a 30-minute essay question. The ISEE is one of two types of admissions tests used by as many as 1,000 nonparochial private schools, the other being the SECONDARY SCHOOL ADMISSION TEST. Because they draw students from a far broader academic range, parochial schools tend to rely on the Cooperative Entrance Exam and the High School Placement Test.

independent study An often vague term referring to any self-directed activity. Thus, nearly every level of education, from kindergarten through graduate school, requires some degree of study that is done independently. Indeed, the goal of education is to teach all students the skills and techniques of learning on their own. In the more formal sense, however, independent study usually refers to an advanced course (most likely in high school, college or graduate school) requiring largely self-directed study of required and recommended works under the broad guidance of an instructor. Such courses may or may not require comprehensive examinations, written papers or independent research projects.

index salary schedule A list of ratios relating the salaries of school teaching and nonteaching personnel to an arbitrarily selected unit figure of 1.00 for one member of the staff. The selected unit for teaching personnel might, for

example, be a beginning teacher's salary or that of a teacher with 10 years' tenure. Regardless of the salary unit selected and represented as 1.00, every other salary may be listed as a fraction or multiple of that figure, thus standardizing the salaries paid to all school personnel. If, for example, the beginning teacher's salary was the designated unit of 1.00 at a particular school, the index salary schedule might list the salary of a teacher's aide as .50, a teacher with 10 years' tenure as 1.50, a department chairperson's salary as 1.70 and the assistant principal as 2.00.

The salary index schedule was developed in the 1960s and 1970s to try to simplify salary negotiations with increasingly militant unions. By agreeing on a salary index schedule first, negotiators could concentrate their remaining efforts on establishing a specific dollar figure as the appropriate base unit. The constantly shifting and often expanding nature of each job classification in recent years has left various school staffers such as teacher aides and assistant principals unwilling to accept the arbitrary limitations to pay increases established by indexes devised years earlier, when their duties were less demanding.

Indiana The 19th state admitted to the Union, in 1816. Although the state constitution of 1816 called for a state-supported system of public education, the state assembly refused to allocate funds for public schools until the 1830s. The academic quality of the state's 2,000 public elementary and secondary schools ranks about average for the United States. Total enrollment is almost 1 million, of whom 17% are minority students, and 9.6% live in poverty. Indiana Seminary (now Indiana University) was founded in 1820 as the state's first institution of higher education. Indiana now has 14 public and 48 private four-year institutions of higher education and 15 public and 24 private two-year colleges. Indiana's four-year colleges have a graduation rate

of about 54%. Among its many notable colleges are Notre Dame University, an independent, Roman Catholic institution founded in 1842, and Purdue University, the state's original land-grant college, founded in 1865 as the Indiana Agricultural College.

Indian boarding school A free residential educational institution administered by the BUREAU OF INDIAN AFFAIRS for AMERICAN INDIAN children too isolated and distant to attend existing reservation or off-reservation day schools. For many years, such schools were centers of controversy as perpetrators of segregation and, often, perpetrators of cruelty for separating children from their families when adequate off-reservation public day schools existed nearby. Although the JOHNSON-O'MALLEY ACT OF 1934 was designed to end such practices, the prejudice of nearby public school boards and corrupt agents of the Bureau of Indian Affairs combined to prevent its enforcement until protests by Indian rights groups in the 1970s brought about reform. The reforms helped convert Indian boarding schools into alternatives to, rather than obligatory substitutes for, local, multiracial public school education.

Individual Education Program (IEP) A specific, individualized program of education that schools must plan and implement for each child enrolled in special education—according to federal law. Before implementation, schools are required to present each IEP to the child's parents for advance approval. Originally required under the EDUCATION FOR ALL HANDICAPPED CHILDREN ACT, the IEP must "include (A) a statement of the present levels of educational performance of [each] child, (B) a statement of annual goals, including short-term instructional objectives, (C) a statement of the specific educational services to be provided to such child, and the extent to which such child will be able to participate in regular educa-

tional programs, (D) the projected date for initiation and duration of such services, and appropriate objective criteria and evaluation procedures and schedules for determining, on at least an annual basis, whether instructional objectives are being achieved." Because gifted children are also eligible for special education, albeit of a different type, schools are required by law to provide them and their parents with appropriate IEPs. However, only 30 states offered any special education to gifted children as late as 2000.

(See also HANDICAPS.)

individualized instruction A teaching technique that encourages elementary and secondary school students to study at their own individual pace rather than in lockstep with others in the class. A form of independent study, individualized instruction frees teachers (and students) from routine lectures, thus permitting the development of programs that meet each child's particular needs. Individualized instruction permits teachers to move from student to student, provide each with immediate feedback, constantly reassess each student's needs and adjust each program accordingly. First developed in Europe in the 1950s, individualized instruction began with reading programs that abandoned textbooks and allowed each child to read at least 10 books a year from approved literature selected according to personal interests. Teachers in such programs regularly check on each child's progress, helping them develop skills either individually or in small groups of students with similar or comparable difficulties.

There are a wide variety of individualized instruction programs, including Individually Guided Education (IGE) and Individually Prescribed Instruction (IPI). IGE is a nontraditional approach to elementary and middle school education that does away with grade levels and focuses entirely on the individual needs and differences of students. Developed on 1964 at

Wisconsin Research and Development Center for Cognitive Learning, IGE replaces traditional classrooms with Institutional and Research (I & R) "units." Each has 100 to 150 students and a staff of one unit leader, three or four staff teachers, an instructional aide, and an appropriate number of student teachers. An Instructional Improvement Committee, consisting of the principal, unit leaders, parents and special teachers, oversees planning of an individualized program for each student. In addition to the individualized program, IGE depends heavily on constant evaluation of student progress by committee and subsequent adjustment of materials to meet student needs. It also depends on the unit leader's ability to obtain nontraditional, IGE-compatible curriculum materials and to obtain complete cooperation and support from parents. About 1,700 schools in nearly 40 states have tried IGE.

Individually Prescribed Instruction (IPI) relies on traditional diagnostic and placement tests to determine a student's individualized program of instruction, which combines programmed, computer-assisted instruction with more traditional and readily available materials. Developed at the University of Pittsburgh's Learning Research and Development Center, IPI places more general guidance responsibility on the teacher, although it still encourages students to progress according to their own, individual rates of achievement.

Individuals with Disabilities Education Act (IDEA) A 1988 supplement to and revision of the EDUCATION FOR ALL HANDICAPPED CHILDREN ACT, which had been passed in 1975 but inadequately funded. The 1988 law provided federal funds to states and local school boards to develop and install advanced technology equipment that might be required for educating the disabled. The original bill had required public schools to provide such facilities for the handicapped, but left it largely up

to states and local communities to finance such facilities. Lack of funds forced thousands of communities to ignore the law, and those that complied often complained that the bill imposed huge costs on small, financially pressed school districts to educate perhaps a single student who, after graduating, would leave a legacy of special facilities that might remain unused indefinitely.

Renewed in 1997 with vastly increased spending at levels guaranteed for five years, IDEA was suddenly able to embrace far greater numbers and a far broader range of individuals with disabilities, including adults and handicapped preschool children in so-called crisis nurseries offering foster care. In 2004, Congress reauthorized IDEA, appropriating more than \$10 billion and adding a groundbreaking program known as *RESPONSE TO INTERVENTION*, or RTI, which identifies learning disabilities and other problems before they create academic difficulties and leave students so far behind their classmates that they require formal special education. RTI practically eliminates the need for special education for all but physiologically damaged children. Together with state and local services, IDEA brought the amount spent on special education in the United States to more than \$80 billion a year.

The 2004 reauthorization of IDEA nearly doubled the number of children served to more than 6.5 million, or 13.5% of the school population. Of particular note, IDEA served more than 600,000 children aged three to five, thus intervening with preschoolers and possibly preventing the development of learning disabilities when the children enter school.

individual test Any examination administered on a one-to-one basis. Although some written tests may be administered individually, most individual tests are oral and require skilled, specially trained examiners to present the test-taker with one problem at a time—

orally or by presenting a picture, diagram or, in the case of preliterate children, a toy. Among the most common such tests are intelligence tests for preschool youngsters. Although helpful in diagnosing emotional or intellectual disabilities, individual tests depend far more on subjective evaluation than do group tests, and their results can be subject to far more distortions and unreliability.

inductive approach A system of reasoning or logic that arrives at broad, general conclusions or laws on the basis of one or more specific observations. In contrast to the *DEDUCTIVE APPROACH*, in which specific conclusions are derived from a general law, the inductive approach derives a general law from a series of specific observations. In general, the greater the number of observations, the more certain the generalization derived therefrom. Like the teaching of deductive reasoning, the teaching of inductive reasoning is basic to elementary school education and essential in the laboratory sciences in secondary school and college.

Industrial Arts Curriculum Project (IACP) A project that developed several *WORLD OF WORK* courses designed to introduce students to on-the-job realities of adult life. Usually presented in grades 7–9, the original IACP courses were entitled “The World of Construction” and “The World of Manufacturing.” Developed in 1971 by a group of educators from Ohio State University, the University of Illinois and the Cincinnati public schools, the year-long courses involved classroom, field and laboratory experiences. Students in “The World of Construction” visited a variety of construction sites, and students in “The World of Manufacturing” studied industrial technology and learned how effective production represents a blend of human, mechanical and material resources. Although the courses were carefully designed to interest a broad range of students, critics

complained that the courses absorbed too much time of college-bound students. As a result, many public (and private) schools set aside the more specialized IACP courses for students in vocational education and adopted a more general and concise one-year course for academic students, called either "The World of Work" or "Technology."

industrial arts education A broad-based and somewhat vague curriculum that combines elements of the "manual training" curriculum from 19th-century schools with elements of 20th-century VOCATIONAL EDUCATION and general studies. Formally proposed by the American Vocational Association in 1975, industrial arts education was to be a broad-based, integrated curriculum running from kindergarten through twelfth grade. The curriculum was designed to teach students about the uses of technology, tools and materials, about the job market and about the functioning of industrial societies. The curriculum had seven specific educational goals:

- to give students an understanding of industry and its place in society;
- to help them discover their own personal talents, aptitudes, interests and career potentials;
- to give them an understanding of industrial processes;
- to help them develop skills using tools and machines;
- to develop their problem-solving and creative abilities as related to industrial materials, processes and products;
- to teach them to identify career opportunities and workplace requirements;
- to teach them how to find and keep a job.

The industrial arts education curriculum had its roots in the manual training schools that opened in Europe in the late 1850s, when the expansion of the Industrial Revolution was hampered by a shortage of skilled workers. In

England and on the Continent, hundreds of thousands of idle, uneducated, untrained and often homeless youngsters roamed the streets, engaging in crime and prostitution. Manual training schools that taught youngsters industrial skills and crafts were seen as an answer for both youth and industry—and society generally. Manual training was introduced to the United States in the 1880s, following a wave of immigration that brought many unskilled European youths to the United States. Shortly thereafter, many public and private schools began introducing some elements of manual training into their elementary school curricula. First demonstrated in JOHN DEWEY'S UNIVERSITY OF CHICAGO LABORATORY SCHOOL, woodworking, cooking, sewing and other manual crafts proved to be highly entertaining methods of teaching students basic reading, writing and arithmetic—and far more successful than earlier rote methods.

Introduction of manual training into the elementary school curriculum eventually led to bifurcation of the high school curriculum in the 1920s, into academics for college-bound students and the "practical arts" for those bound for the world of work after high school. In turn, the practical arts curriculum split into pure vocational education, which trained students for specific skills and occupations, and general studies, which by the late 1960s had deteriorated into an educational "track" for less motivated students. Consisting of personal improvement courses that taught few marketable skills and equally inadequate academic courses, the general studies track produced two-thirds of all high school drop-outs by the late 1980s.

infancy education The instruction of preschool children by trained teachers in a setting outside the home. Infancy education is designed to facilitate social and academic development by the preliterate. The first so-called infant school seems to have originated between 1812 and 1816 as part of ROBERT OWEN'S utopian

social experiment in New Lanark, Scotland, where children between the ages of two and seven were placed under the care of female teachers while their mothers were at work. The institution died, as the age deemed appropriate for school climbed to five or six.

Although German pedagogical theorist FRIEDRICH FROEBEL tried to perpetuate the concept by starting a KINDERGARTEN in Griesheim in 1816, the idea of educating preliterate infants did not revive until 1837, when Froebel opened another kindergarten in Blankenburg, Thuringia, and established training courses for kindergarten teachers. His disciples opened other kindergartens throughout Germany, and the concept spread to the United States in the early 1870s. By the end of the century, the “kindergarten movement” had spread across the United States, and more than 225,000 American children—usually about five years old—were attending kindergartens. Most of these schools were based on Froebelian principles, with teachers engaging children in a variety of play routines, including story reading, singing, games and manipulative activities using colored forms and shapes that allowed children to learn geometric and mathematical concepts intuitively.

Although the term *infant school*, or *British infant school*, continued to be used to refer to kindergartens and schools for children aged five to eight, the concept of the true “infant school” for prekindergarten children four years and younger died until the 1920s, when Teachers College–Columbia University introduced the “Four-Year-Old Group” in its experimental Horace Mann [lower] School. Activities comparable to those in kindergarten and designed to promote socialization as well as education allowed the school to transform kindergarten into a more advanced program that helped make students “school-ready” by fostering in them the self-discipline and basic skills required for the formal school years.

In 1933, the federal government began organizing the first state-run preschools, or “nursery schools,” as they were called, largely as day-care centers for infants of mothers who needed to work during the Great Depression. The concept expanded during World War II, when major corporations and other large employers dependent on female workers established on-site day care facilities and nursery schools to care for the preschool dependents of their female employees. The number of nursery schools expanded after World War II, as studies proved that intellectual and academic achievement of older students correlated directly with the amount of their preschool education. By 2005, all 50 states had established kindergarten education as a standard part of their primary school systems, and all but one state had established prekindergarten education.

In an effort to combat the academic failure that seemed tied so directly to lives of poverty in the United States, the federal government created a national system of state-supported nursery schools in 1965. After enrolling about 500,000 in its first summer in 1965, Operation Headstart, as the program was called, expanded to more than 800,000 children a year, offering mental and physical health care, child welfare, recreation facilities and remedial services, as well as intellectual development. Over the next three decades, HEAD START mushroomed into a multibillion-dollar-a-year program, with 1,400 schools in poor areas across the United States.

(See also KINDERGARTEN; NURSERY SCHOOL; PRESCHOOL.)

Informal Reading Inventory (IRI) A relatively quick measure of a child’s reading ability and reading comprehension, as expressed by grade or age level. Available from a number of publishers, IRI measures both the child’s independent reading level (that is, the ability to read and understand without assistance) and

instructional reading level, which is the reading level the child can understand with instructor assistance.

information specialist; information technology See LIBRARIAN; LIBRARY.

Ingraham v. Wright A 1977 U.S. Supreme Court ruling that spanking by school authorities did not violate the constitutional rights of students. The case involved two Miami, Florida, junior high school students who claimed they had been subjected to “cruel and unusual punishment” when they were summarily spanked with a two-foot-long paddle for alleged disobedience—without the benefit of “due process” at a hearing. The Court ruled that the Eighth Amendment that prohibits cruel and unusual punishment applied only to persons convicted of crimes and that the schoolchild had little need for its protection. The Court cited the long history of corporal punishment and its widespread use in schools as a means of maintaining discipline. Corporal punishment remains permissible in more than 20 states.

initial teaching alphabet (i.t.a.) A historically interesting but outdated, phonics-based augmented alphabet with 45 letters and DIGRAPHS representing the sounds as well as letters of the English alphabet. Invented in 1959 by Sir James Pitman, grandson of Sir Isaac Pitman, who invented Pitman stenographic SHORTHAND, i.t.a. consists of 27 consonants, 17 vowels and the letter “y,” which can be either a vowel or consonant. Originally called the Augmented Roman Alphabet, i.t.a. was a precursor to more modern augmented alphabets that simplify learning the names, sounds and sound combinations of the alphabet. I.t.a. eliminated the need to distinguish capitals from lowercase letters by presenting all 45 letters and symbols in shorter or taller type to indicate capitals. I.t.a. was used for a limited time in kindergar-

ten and first grade to teach the alphabet and its different sounds. After mastering it, the student would begin learning traditional lettering, whose sounds were more easily mastered because of the resemblance of each combination of letters to the digraphs.

in loco parentis A Latin term meaning “in the place of the parents” and referring to the once-unquestioned legal prerogative of teachers to act in the classroom and in school with all the authority of parents. Now virtually nonexistent in all day schools, the doctrine of in loco parentis depends on each state’s constitution and laws governing education. The principle is still relatively strong in some private boarding schools, but even with parental consent, teachers cannot violate student constitutional rights of which parents might routinely deprive them at home.

innumeracy The inability to calculate or perform arithmetic functions with numbers—a form of ILLITERACY. An adult literacy survey commissioned by the U.S. DEPARTMENT OF EDUCATION and released in 1993 concluded that more than 40% of the 26,000 randomly selected Americans above the age of 15 suffer from innumeracy. Conducted by the EDUCATIONAL TESTING SERVICE, the survey purposely limited questions to practical matters that people face every day, such as filling out bank deposit slips. The study drew no conclusions about intelligence, limiting its task to assessing number skills needed for the workplace and for civic activities such as voting and jury service.

The survey used a test that had five levels of proficiency, each of whose questions were weighted according to difficulty. The survey found that more than 21% of test-takers performed at the lowest level, unable to calculate the total of a purchase or determine the difference in price between two items. Another 20%

operated at the second lowest level, able to perform only a single operation using numbers clearly stated on the test, but unable to use two or more numbers to solve a problem. About 32% functioned with middle-level skills and were able to extract numbers from a text to solve a problem or explain a billing error. Fewer than 6% functioned at the next level, which required the ability to perform two or more sequential operations or a single operation in which the quantities were found in different texts. Nearly 21%, however, functioned at the highest level, requiring performance of multiple, sequential operations based on extracting materials from a text and a background knowledge of quantitative relationships.

The majority of whites scored in the three highest levels and outscored blacks, Asians and Hispanics in all three categories. A majority of Hispanic and Asian adults who scored in the lowest level were born outside the United States. Low scores of blacks were attributed to the poor quality of public schools in black areas. The survey found both that older people tended to have lower scores and that scores generally correlated directly with incomes. Those with the lowest scores earned the lowest median incomes, while those with the highest scores earned almost three times more. American industry estimates it loses between \$25 billion and \$35 billion a year because of lost productivity, errors and accidents attributable to innumeracy and illiteracy. Goaded by industry and dissatisfied parents, most state governments instituted minimum standards in mathematics achievement in public elementary and secondary schools. By 2005, average mathematics proficiency had improved nearly 7% among fourth graders (nine-year-olds) and 5.3% among eighth graders (13-year-olds), but innumeracy rates remained stubbornly high at 24% among fourth graders and 33% among eighth graders—a reflection in some areas, at least, of the growth in the poor, immigrant population.

inquiry method An increasingly popular method of teaching students to solve a problem by providing questions whose collective answers will inevitably lead them to its solution. Particularly useful in the sciences and history, the inquiry method may call on students to work independently or cooperatively. In either case, the teacher serves only as a source of, and guide to, study resources and abandons all vestiges of traditional pedagogical techniques in which the teacher imparts information or guides the students authoritatively. The approach, which requires considerable academic permissiveness, was first suggested by JOHN DEWEY, who insisted that students learn as much from wrong answers as they do from correct ones and, therefore, should not be rewarded or penalized according to the correctness of their answers but according to their problem-solving techniques.

in-service education Postgraduate education and training of professional teachers during their working years. Depending on its complexity, in-service education may simply involve short-term training provided free of charge by the school, school district or state, either on or off the school premises. At the other extreme, in-service education may involve study for an advanced degree at the teacher's expense and on the teacher's own time. Within this range, in-service education may involve formal or informal courses, workshops, discussions, conferences, travel or any other activity that a state or school district approves as a qualified professional advancement activity. Many states and school districts require, and indeed provide, salary and promotional incentives for academic in-service education. Some schools provide special paid and unpaid leaves and even tuition reimbursement as further incentives for teachers to pursue in-service education.

institute A specialized two- or four-year institution of higher education. Operating either independently or as a school within a larger university, an institute is usually limited to offering associate or bachelor's degrees in scientific and technical fields. The term is also used to refer to a brief, intensive and rarely held university or postgraduate course of instruction in a selected area not usually covered by conventional, regularly scheduled courses.

Institute of Education Sciences A branch of the U.S. DEPARTMENT OF EDUCATION founded in 2004 to develop eight national educational research centers at various American universities with \$10 million grants each. Unlike previous educational research centers, the new centers limit the scope of their research and enlist nonuniversity partners. The Center on School Choice, Competition, and Achievement at Vanderbilt University, for example, enlisted the Brookings Institution, a Washington, D.C., "think tank," as an outside partner, along with Northwest Evaluation Association, a nonprofit Portland, Ore., organization that provides testing services to 1,200 school districts. The Center for Data-Driven Reform in Education at Johns Hopkins University is studying low-achieving school districts and, with the help of Baltimore's Success for All Foundation, is developing benchmark tests to pinpoint weaknesses and develop solutions from a range of research-based, off-the-shelf improvement programs. The University of North Carolina used the institute's grant to open the Center on Rural Education in Chapel Hill, N.C., to study difficulties rural children have in making the transition from their isolated rural homes into primary and secondary schools.

institutional church An evolutionary phase of some urban Protestant churches—especially in New York City—during the late 1880s, when parishioners retreated from their old neighbor-

hoods as poor immigrants moved in. Churches in such neighborhoods had two choices: to move with their parishioners or to remain and adapt to a new constituency. Those able to sell their land and buildings and follow their wealthiest parishioners did so. Some of the rest simply died in the wake of shrinking congregations and eventually abandoned their properties. The rest adapted and evolved into so-called institutional churches, which opened their doors to all their new neighbors, regardless of their previous religious affiliations. They offered memberships to all and broadened their religious messages to be more inclusive. In addition, institutional churches expanded their missions by offering a wide range of non-religious, educative and recreational activities to benefit their congregants. Some built community houses adjacent to their churches, with multiple-use facilities for young people to use for reading, dancing, playing games or listening to music. Other institutional churches sought to compensate for the failures of local public schools by organizing trade schools where boys could learn carpentry, printing, mechanical drawing, electrical and metal work and applied design.

"The public schools of New York are lamentably behind the times," warned the Reverend William S. Rainsford of the St. George's Episcopal Church, one of New York City's classic institutional churches. "What the church should do is set an example of a higher standard for growing boys and girls." To that end, he rearranged the Sunday school curriculum into graded lessons taught by newly recruited teachers selected for their warm personalities as well as their knowledge of Scripture. He set up a circulating library, organized a club and summer camp for boys 14 to 18, a club for girls, a men's club and a women's club, a relief program for the needy (complete with a free grocery store) and an emergency fund for the impoverished. All the programs were supported

by former parishioners, such as banker J. P. Morgan, who had moved away from their old neighborhoods but supported the new role of the institutional church in Americanizing immigrants and helping them become loyal, productive citizens. By 1889, there were more than 170 institutional churches across the United States, with more than a dozen in New York City alone. During the economic depression of the 1930s and during World War II, public and private agencies assumed many of the nonreligious, educative and social functions of institutional churches. As a result, many of the churches suffered declines in membership.

instructional materials center An expanded school area that incorporates and integrates the library, audiovisual services, educationally oriented computer services and, in many instances, LEARNING LABORATORIES. Often called a learning resource center, the instructional materials center offers consultative services to students as well as a repository for reference materials. Instructional materials centers are designed for active intervention and improvement in student learning skills—that is, they are instructional spaces. At many colleges, consultative services to improve learning skills may be segregated in their own area that is usually called simply the “learning center” and stands apart from the library and audiovisual center.

instructional television (ITV) A noncommercial, school- or teacher-run, closed-circuit television network within a school or college, which instructors may use intermittently to transmit audiovisual materials to groups of students in one or more classrooms or auditoria. ITV’s classroom and auditorium monitors remain “black” when no specific teaching material is being displayed, although some institutions permit student groups to present

student-produced entertainment or public service programs as part of formal or informal television production instruction. The term ITV is used to distinguish it from ETV, or educational TELEVISION, provided by independent stations that broadcast scheduled programming.

integrated studies A term used by educational pioneer JOHN DEWEY to refer to a system of primary and secondary school instruction that interrelates as many different subjects as possible in the study of any particular topic—for example, interrelating geometry, physics, art, language development and art history in the study of the Egyptian pyramids in history class. Integrated studies are the basis of TEAM TEACHING, in which teachers of each course in a given grade cooperate and attempt to interrelate each week’s class work and homework assignments. At the college level, integrated, or interdisciplinary, studies are based on much the same principle, integrating into a new course or even a new department all relevant materials from other courses in other departments. An integrated course in “American Studies,” for example, might include specialized, American-oriented materials from history, political science, geography, sociology, science, art, literature, philosophy and other courses with materials related to the United States or the Americas.

Interdisciplinary studies may have started at Yale University in the 1930s, with the development of a course entitled “History, the Arts and Letters.” Whatever their origin, they are now so common they are blurring the boundaries between many traditional departments. In the sciences, chemistry and physics have gradually been drawn into the field of biology. Such courses as zoology and botany have been replaced by interdisciplinary courses such as structural biology—a combination of physics, chemistry and biology—and cognitive biology, which marries psychology and biology. Archae-

ological research requires a knowledge of nuclear chemistry, linguistics, art history, ethnography and other courses beyond the strict, traditional boundaries of archaeology, and history studies are intricately tied to political science and geography.

integration A term with multiple meanings in education, but first used in the 1950s to connote the mixing of blacks and whites in schools in compliance with the landmark 1954 U.S. Supreme Court decision in *BROWN V. BOARD OF EDUCATION OF TOPEKA*. The decision overturned the 1896 Court decision in *PLESSY V. FERGUSON*, which had supported the constitutionality of racially segregated schools with “separate but equal facilities,” mandated by state laws in the South and by school district regulations in many other areas of the United States. The Court based its decision in *Brown*, however, on conclusive studies showing that segregated schools, by the very nature of being racially segregated, cannot be equal academically. Although the 1954 ruling outlawed segregation and ordered schools to desegregate, desegregation proved far from synonymous with integration, which means a total and complete mingling of a heterogeneous population, with homogeneity the inevitable, ultimate result. The U.S. Supreme Court defined school integration, however, as an interracial student body with no more than 85% of the students being of one race.

Although the Court’s decision eliminated de jure segregation and, indeed, imposed a variety of de jure integration, the Court was unable to eliminate de facto segregation based on the racial makeup of neighborhood populations whose local schools draw students only from that neighborhood. Moreover, even legally desegregated schools may not necessarily be academically integrated if students within the school are grouped in tracks reflecting academic achievement or if students voluntarily

segregate themselves socially, as they are wont to do in many schools, colleges and universities. Ironically, alumni, students and faculty at some historically black public colleges have attempted to block state efforts to comply with court-ordered desegregation by integrating such schools with nearby white public colleges. Citing a tradition and historicity dating back to the Civil War, black opponents of integration claim all-black colleges offer a warmer, more nurturing atmosphere for deprived blacks than do integrated schools.

In addition to its association with racial mixing, integration has accumulated a wide range of other connotations in education, including the mixing of students of different ethnic or religious backgrounds, of students of different national origins, of students of different sexes, and most recently has become a synonym for MAINSTREAMING, that is, the integration of handicapped and nonhandicapped students.

(See also AFFIRMATIVE ACTION; AFRICAN AMERICANS; CIVIL RIGHTS ACT OF 1964; CLARK, KENNETH B.; COLEMAN REPORT; DESEGREGATION; SEGREGATION.)

intelligence A much-debated abstraction related to an individual’s ability to reason and learn. Often mistaken for development and maturation, intelligence is believed by some to be inherited and genetically determined, while others believe it is environmentally determined and, therefore, the result of training, experience and other external influences. Most educators believe intelligence is a combination of the two, that is, a combination of biological factors and environmentally produced educative factors such as child-rearing practices, parental attitudes, parental levels of education, cultural influences and a range of intellectual experiences at various ages. There is little question that school-aged children who receive extensive education during

infancy and the preschool years function better academically than those who do not receive such education. Whether academic success is synonymous with intelligence, however, is itself a much-debated question. Many psychologists theorize that intelligence is not a quality but a process. Some go a step further by postulating a series of constantly variable processes, that is, multiple intelligences relating to logic and mathematics, visual and spatial abstractions, muscular coordination and many other intellectual and physical functions—all of them constantly changing and developing.

Whatever intelligence is, it is measured in the United States by so-called intelligence tests that yield an I.Q. score, or INTELLIGENCE QUOTIENT, that is a measure of an individual's "general ability" compared to others of the same age. First used with the 1916 version of the STANFORD-BINET INTELLIGENCE TESTS, the I.Q. score originated in 1908, when French psychologist Alfred Binet developed the concept of "mental age." Derived from the individual's raw score on Binet's standardized intelligence tests, the mental age was then divided by his or her chronological age and multiplied by 100 to arrive at the intelligence quotient. The mean I.Q. of 100 is the result of dividing a mental age by an equivalent chronological age. A 12-year-old child with a mental age of 12 has an I.Q. of 100. A mental-age measurement of 12 produces an I.Q. of 120 for a 10-year-old and an I.Q. of 80 for a 15-year-old.

The standard deviation (usually 15 or 16) of most I.Q. scores is so wide that it tends to obscure the meaning of traditional I.Q. test scores for school placement purposes. Many psychologists, pediatricians and schools now depend on newer individual and group tests such as the OTIS-LENNON MENTAL ABILITY TEST or WECHSLER INTELLIGENCE SCALE FOR CHILDREN, whose results correlate directly to school performance rather than to the abstract concept of I.Q.

(See also COGNITION; MULTIPLE INTELLIGENCE THEORY.)

intelligence quotient A measure of an individual's "general ability" compared to others of the same age. First used with the 1916 version of the STANFORD-BINET INTELLIGENCE TESTS, the I.Q. score originated in 1908, when French psychologist ALFRED BINET developed the concept of "mental age." The intelligence quotient was derived by dividing the raw score on the Stanford-Binet test—the so-called mental age—by the test-taker's chronological age and then multiplying by 100. The mean I.Q. of 100 is the result of dividing a mental age by an equivalent chronological age. A 12-year-old child with a mental age of 12 has an I.Q. of 100. A mental-age measurement of 12 produces an I.Q. of 120 for a 10-year-old and an I.Q. of 80 for a 15-year-old. Intelligence quotients can be derived from any of a wide variety of standardized intelligence tests, all of which are designed for specific age groups because of the changing nature of mental age.

Sometimes called intellectual age, the mental age is, at best, a vague concept. It tends to accelerate during early childhood and decelerate—indeed, even shrink—during adulthood. Thus, children with identical mental and chronological ages, and, therefore, I.Q.s of 100 on their third birthday may see their mental ages reach 12 by their 10th birthday, settle back to 30 on their 30th birthday and decline to 48 by the time they reach 50. Properly designed I.Q. tests should in theory produce consistent intelligence quotients of 100 throughout their lives, assuming, as do many psychologists, that I.Q. is a genetically determined attribute unaffected by environment. In fact, I.Q. scores can vary dramatically during an individual's lifetime—usually as a function of the individual's cultural environment, but often because of the type of test. Indeed, studies at Yale University's Institute of Human Relations in the 1950s

showed that the I.Q.s of identical twins did not remain identical when the twins were separated at birth and adopted into different homes. The I.Q.s of some of the children varied as much as 20% from those of their twin siblings during their first 10 years—always in apparent reflection of the cultural level of their adoptive homes.

(See also INTELLIGENCE; WECHSLER INTELLIGENCE SCALE.)

intelligent design A theory that an as-yet-unidentified guiding force directed the development of all living organisms, including humans. Developed as an alternative to Charles Darwin's theory of evolution, the theory of intelligent design claims that living organisms are too complex to have evolved from common ancestors through natural selection and random mutation. Underlying the argument for intelligent design is the concept of "irreducible complexity," which holds that interdependent parts of most organisms make it impossible for them to have existed in any other earlier, more primitive form. Developed as an alternative to CREATION SCIENCE, or "creationism," the theory of intelligent design carefully avoids all references to religious beliefs, which, by injunction of the U.S. Supreme Court, the public schools are prohibited from teaching or disseminating. In December 2005, however, a Federal District Court in Harrisburg, Pennsylvania, ruled that intelligent design was as much a religious viewpoint as creationism and that public schools injecting it into the science curriculum were in violation of the First Amendment of the Constitution.

The origins of intelligent design stretch back to 1925, when John T. Scopes, a science teacher in Dayton, Tennessee, was prosecuted for violating a state law by teaching the theory of evolution instead of creationism. Although the SCOPES MONKEY TRIAL provoked worldwide ridicule of fundamentalist Christians, states

dominated by fundamentalist sects retained laws banning the teaching of evolution until 1987, when the United States Supreme Court ruled in *EDWARDS V. AGUILLARD* that a Louisiana law prohibiting the teaching of evolution in public schools except in conjunction with creationism amounted to an endorsement of a religious belief and, therefore, violated the constitutional separation of church and state. In 1993, the Foundation for Thought and Ethics, in Richardson, Texas, published the first textbook on intelligent design as a thinly disguised effort to reintroduce creationism into the classroom—although it avoided all biblical terms, including God, and all references to a higher authority. *Of Pandas and People*, by Percival Davis and Dean H. Kenyon, states that there is "no positive fossil evidence for evolutionary descent. . . . Many scientists conclude that there never was a progression from one cluster to another—that each really did originate independently. This idea accords with the theory of intelligent design. Design theories suggest that various forms of life began with their distinctive features already intact; fish with fins and scales, birds with feathers and wings, mammals with fur and mammary glands. . . . Might not gaps exist . . . not because large numbers of transitional forms failed to fossilize, but because they never existed?" Adopted in public school classrooms throughout formerly "creationist" states, the text offers no scientific studies to support its contentions, and 11 parents in the Dover school district of southwestern Pennsylvania filed suit to halt the teaching of intelligent design in a ninth grade biology class. They won their case on December 20, 2005, when Federal District Court Judge John E. Jones III ruled on the case—*KITZMULLER V. DOVER AREA SCHOOL DISTRICT*—and declared that intelligent design was as "grounded in religion" as creation science and was nothing more than "creationism relabeled."

For years, the federal courts have banned the teaching of religion-based views such as creationism in public school science classes, although religious beliefs may be discussed in "elective" social studies classes if equal time is provided to discuss all conflicting views. "Equal time," however, is not a consideration in science classes. The courts have consistently ruled that if it is not science, it cannot be mentioned, let alone discussed, in science classes.

Intel Science Talent Search A nationwide program to encourage the study of science in the United States by identifying the most scientifically talented high school students in the country each year and rewarding them with college scholarships totaling more than \$200,000. Originally called the Westinghouse Science Talent Search, the program traces its roots to a discussion at the 1939 New York World's Fair between a representative of Westinghouse Corporation and the director of Science Service, a nonprofit organization in Washington. Both men lamented the lack of science education in the United States and the fact that fewer than 1,000 of the 25,000 American high schools at that time had trained science teachers or even rudimentary science courses. Three years later, Westinghouse agreed to grant \$25,000 to cover scholarships and costs for the first "search," in 1942. Over the next 65 years, the company provided more than \$10 million in scholarships and cash awards to nearly 20,000 semi-finalists and 2,500 finalists in what became the nation's most prestigious science awards for secondary school students. Science Service continues to administer the program, with all funding now provided by Intel Corporation of Santa Clara, California.

The search brings together the brightest, most creative science students in the United States. STS finalists have gone on to win more

than 100 of the world's most coveted science and mathematics awards and honors, including six Nobel Prizes and 10 MacArthur Foundation Fellowships. Fifty-six have been named Sloan Research Fellows, and more than 30 have been elected to the National Academy of Sciences. More than half the former search winners are in either teaching or research positions at colleges and universities.

Tens of thousands of students have competed in the awards since their inception. Each student must submit a written report on an independent research project in the physical sciences, behavioral and social sciences, engineering, mathematics or biological sciences (excluding live vertebrate experimentation). An entry must include verification from school officials and a teacher or mentor, along with official high school transcripts and any available standardized test scores such as SATs or ACTs. Forty scholarships ranging from \$5,000 to \$100,000 are awarded annually.

Deadlines for entries are late November of each year, with the names of 300 semifinalists announced in mid-January and those of the 40 finalists announced in late January. Intel awards each of the 300 semifinalists a \$1,000 college scholarship and contributes \$1,000 to each student's high school. Semifinalists also receive certificates of commendation, along with recommendations to colleges and universities urging the admission of each student, with appropriate financial assistance if necessary. In early March, the 40 finalists are awarded a five-day, all-expenses-paid trip to Washington, D. C., for the final judging. Their research exhibits are displayed and viewed by thousands of visitors, including members of the government and scientific communities. Winners, whose names are announced at a culminating awards ceremony, meet distinguished scientists and, often, the president or vice president of the United States.

interactive evaluation A method of instruction by which the teacher encourages a student to assess his or her own work, thus provoking independent thought and the development of reasoning and problem-solving skills. Interactive evaluation focuses on how a student reaches a conclusion, rather than the traditional unilateral teacher evaluation that a student conclusion is correct or incorrect. By concentrating on how a student uses knowledge to reach a conclusion rather than the conclusion itself, interactive evaluations build on reasoning skills and teach children that evaluation is a helpful process for identifying and overcoming roadblocks to learning, rather than a negative and discouraging judgmental process. In simplest terms, with interactive evaluation, teachers ask warm but provocative questions such as “What do you think of that?” “What will you do next?” “Why did you do it that way?” and “How did you figure that out?” instead of snapping out, “Wrong! Who knows the right answer?”

interactive model of reading A theory of learning to read based on a combined use of phonics, whole words and other experiential materials. Developed in 1976, the interactive model incorporates all previous learning theories and teaching approaches, including the two most prominent: the “bottom-up” and “top-down” models. The bottom-up model theorizes that learning of reading takes place by piecing together small parts, or phonic sounds, to form letter sounds first and then a word sound. The contrasting top-down model insists that children learn entire words by sight, by the distinctive shape of the word, rather than by individual letters, and that they must then take each word apart to learn each letter and its sound. Experienced teachers recognize that children use both methods to some degree, with some students learning sight words more easily than others and instinctively distinguishing words by their

distinctive shapes—pizza, for example. Other children seem unable to distinguish entire words when first learning and are almost totally dependent on “sounding out” each new word, letter by letter.

The interactive model of reading recognizes that children learn from all information sources at their disposal: letters, sounds, syntax (the context in which a word is used), shapes and experience. Most reading teachers depend on this broader, more flexible model, which recognizes that different types of reading produce different types of learning. Studying for a vocabulary test, for example, produces slow, letter-by-letter, word-by-word learning experiences, while reading of literature is a faster, scanning process in which children learn meanings and spellings intuitively by syntax and repetitive visual sightings of words.

interactive whiteboard An electronic replacement for overhead projectors and the once-ubiquitous CHALKBOARDS (blackboards) that covered the walls in classrooms across the nation. Teachers and students can put text materials, graphics, illustrations and other instructional materials on interactive whiteboards using computer keypads, or they may use their fingers to write or draw directly on the boards. A tap of the finger can call up materials such as photographs and video clips, and all materials on the board can be printed out or stored in computers for students to study after class or sent on-line to students who are absent. Invented in the early 1990s, interactive whiteboards are gradually becoming standard equipment in schools around the world, with nearly 100,000 installed in American classrooms and at least two installed in every school in the United Kingdom. Costing \$3,000 or more to buy and install, the whiteboards are available from at least a half dozen companies.



A representative from manufacturer Smart Technologies demonstrates writing on an interactive whiteboard. (Associated Press)

interest inventories Questionnaires that attempt to determine the extent of an individual's interest in a particular course of study, vocation or avocation. Used to help students decide on college majors, professional schools and career choices, interest inventories were first developed in the early 1900s and are based on research from the Carnegie Institute of Technology (now Carnegie-Mellon University) in Pittsburgh. That research found that people in almost any given sphere of activity have common interests, disinterests and dislikes. Interest inventories ask test-takers whether they "like," "dislike" or are "indifferent" to various activities, types of people, school subjects and so on.

Intergovernmental Advisory Council on Education A presidentially appointed group of 20 federal, state and local government officials, educators, business leaders and representatives of parent and student groups who assist and advise the president in formulating federal educational policies.

interlibrary loan system Any cooperative arrangement between two or more libraries whereby members of one library may automatically borrow publications from other libraries in the cooperating group. Interlibrary loan systems exist locally, regionally and statewide and may function between any number of institu-

tions of common interest, such as universities and museums.

intermediate school A term usually synonymous with junior high school or middle school, and therefore embracing any of a combination of grades between elementary school and high school. However, *intermediate school* is sometimes used in the narrow sense as a special school for emotionally troubled or other youngsters requiring too many special education and other services for a conventional school to provide. Such schools are usually established cooperatively by two or more nearby schools, whose boards create an “intermediate,” semiautonomous school district for the special school.

(See also JUNIOR HIGH SCHOOL; MIDDLE SCHOOL.)

intermediate units Educational administrative groups with varying degrees of authority to establish educational services that would otherwise be unavailable to local school districts. Traditionally divided into intermediate administrative units and intermediate education units (IEUs), the former usually serve in highly populated cities and states as liaisons between groups of schools—all the schools in one county, for example—and the state BOARD OF EDUCATION. Designed simply to foster efficient communication and cooperation between local and state education officials, the intermediate administrative unit provides local school districts with consultative, advisory, administrative and statistical services and helps interpret and enforce state regulations at the local level. Depending on the state, it may or may not have taxing authority.

IEUs, on the other hand, are semi-autonomous administrative units established to operate particular educational services, programs or schools outside the traditional school system. Usually operated on a cooperative basis for two

or more school districts, the most common intermediate educational units provide either special education or vocational education on a regional basis for several school districts too small to afford to offer such services by themselves. IEUs fall into three categories, depending on whether they are established by the cooperating school districts (cooperative agency), by state and cooperating local authorities (special district) or by the state alone to provide a specific broad-based service (regionalized agency). Different states have a wide variety of names for their IEUs, the most common being Cooperative Educational Service Agency, Intermediate School (or Education) District and BOARD OF COOPERATIVE EDUCATION SERVICES (BOCES).

internal degree A rarely used term referring to traditional college degrees earned on campus by following a prescribed program of study and class attendance. The term is used simply to differentiate the internal from the nontraditional EXTERNAL DEGREE earned off-campus through correspondence courses and other methods of self-directed study.

(See also DEGREE.)

International Association for the Evaluation of Educational Achievement An organization founded in 1959 to provide comparative assessments of schools and student achievement in member nations. Headquartered in Ghent, Belgium, the association published the landmark first edition of its multivolume *International Evaluation of Educational Achievement* in 1976. Continuing studies have since determined the knowledge and skills of 10-year-olds, 15-year-olds and students in the terminal year of full-time secondary schooling in several dozen participating countries, including the United States. The original, NORM-REFERENCED TESTS measured science knowledge and skills, reading comprehension, knowledge of literature, knowledge of

French as a foreign language (in 1959, still the most widely studied modern language), and extent of civic education of 250,000 students in 22 nations, including the United States.

Young Americans tended to score well in comparison with their overseas counterparts in literature and civics, but they fared poorly in mathematics and in French. Indeed, IEA's First International Mathematics Study in 1964 and the subsequent Second International Mathematics Study in 1985 found that American students ranked among the lowest in the industrial world. The results so embarrassed state and federal educational officials that the U.S. Congress adopted a new program—GOALS 2000—to improve mathematics and science education and to lift American students to a top international ranking by the year 2000.

In 1991, the IEA's International Assessment of Educational Progress found that American nine-year-olds ranked ninth (ahead of Slovenia) among 10 nations in mathematics proficiency, but third, behind South Korea and Taiwan, in science. American 13-year-olds ranked 14th, ahead of Jordan, in mathematics proficiency and 13th, ahead of Ireland and Jordan, in science proficiency among students from 15 nations. Countries variously involved in the studies were Belgium (both Flemish and French), Canada, England and Wales, Finland, Japan, France, Hong Kong, Hungary, Israel, Jordan, Luxembourg, the Netherlands, New Zealand, Nigeria, Scotland, Slovenia, Swaziland, Thailand and the United States. The poor showing of American schoolchildren provoked widespread demands for reform of American public school education. By 2000, however, those reforms seemed to be having little effect. American 15-year-olds ranked 18th in the industrialized world in reading literacy, 28th in mathematics literacy and 14th in science literacy, same-aged students in Australia, Austria, Belgium, Canada, France, Iceland, Ireland, Japan, Finland, Norway, South Korea, and

Sweden consistently outscored their American counterparts.

Critics of international testing, however, contend that comparisons between American and foreign public-school students are grossly inaccurate for a variety of reasons. First, enrollment rates differ sharply. Although elementary school education is compulsory throughout the industrialized world and enrollment rates approach 100%, enrollment rates in secondary schools average a mere 58% in the foreign developed world, where, at 14, children must pass competitive examinations to remain in the academic education system and subject to international testing. The other children go either to vocational schools or into apprenticeships, where they no longer participate in international testing. In contrast, 98% of American children enroll in conventional secondary schools, where underperforming youngsters from economically and culturally deprived minorities and immigrants alike participate with all other students in the international tests.

Still another aspect of foreign education that critics say make test results for Americans meaningless is school structure. Unlike American high schools, foreign secondary schools include no sports or recreation in their curricula and compress the equivalent of the first two years of the American college curriculum into their secondary school curriculum. Eighteen-year-olds graduate from high school with baccalaureates, or bachelor's degrees, and go on to university to obtain their master's degrees. At 18, they are thus two or more academic years ahead of their American contemporaries; at 15 they are at least one year ahead. Most secondary school systems in other countries are self-selective, automatically weeding out low achievers when they reach the age of 12 or 14 and either sending them off to labor, as they do in developing countries, or to apprenticeships or vocational schools, as they do in the more advanced, industrialized nations such as France, Germany

and Japan, among others. The process allows only the academically gifted to remain in academic high schools to compete in international testing with a far more average cross section of American high school students.

(See also HIGH SCHOOLS, U.S. VS. FOREIGN.)

International Baccalaureate (IB) A specialized secondary school diploma valid internationally as evidence of satisfactory completion of secondary school education. A product of the growth of the international diplomatic and business communities after World War II, the IB was developed over five years, beginning in 1965, by a group of 20 international secondary schools that sought to develop a curriculum and university entrance examination that could be taken in any country and be accepted by universities worldwide. At the time, widely varying standards of education in many countries forced parents living abroad to separate themselves from their children, who were forced to stay home and study in the school systems of their own countries to qualify for admission to their own universities.

The rigorous and comprehensive two-year curriculum that resulted in 1970 was a deliberate compromise between the specialization required in some national systems and the breadth required in others. The goals of the IB curriculum are "to provide students with a balanced education; to facilitate geographic and cultural mobility; and to promote international understanding through a shared academic experience." The curriculum consists of six subject groups, from which students must select at least one course each. Three or four must be studied for two years and the others for one year. The six groups and the courses in each are:

- Language A (the student's primary language), including study of selections from world literature
- Language B
- Individuals and Societies (history, geography, economics, philosophy, psychology, social anthropology, business and organization)
- Experimental Sciences (biology, general chemistry, applied chemistry, physics, environmental systems, design technology, physical and chemical systems)
- Mathematics (basic mathematics, mathematical methods, mathematical studies, advanced mathematics)
- Electives (art/design, music, Latin, classical Greek, computing studies, history and culture of the Islamic world, advanced mathematics, a second subject from the humanities or sciences, a third modern language or a course from the local school that is approved by IB)

In addition to final examinations, most subjects require a 2,500-word term paper followed by a 20-minute oral defense of the paper. In addition to the basic curriculum, students must take a course entitled Theory of Knowledge to explore the relationships among the various disciplines. They must then write an independent research paper or "Extended Essay" of 4,000 words. Final examinations for seniors last 25 hours over a two-week span.

Headquartered in Geneva, Switzerland, IB has more than 600 member secondary schools in 73 countries, with nearly 200 in the United States and Canada. Almost 85% of participating U.S. schools are public schools with standard curricula that would not provide students with adequate academic qualifications to enroll in the most academically selective foreign universities.

International Harvester Co. Once the largest manufacturer of farm machinery in the United States and a pioneer in company-operated educational programs for its employees. Now called Navistar, International Harvester was one of the first companies to adopt a policy that sought to combat growing unionism at the turn of the century by building employee

loyalty with generous, wide-ranging programs of free services. Although recreation was one element of such programs, education formed the core. Harvester and other companies made generous contributions to local public schools to improve education of employee children. It sponsored homemaking classes and sewing schools and a wide-ranging Americanization program that included education in English and civics and the promotion of libraries and social clubs. It was among the first companies to publish house organs with articles on employees, inspirational messages and other articles designed to unify the company community.

In 1908, Harvester established a formal, company-wide education program that started with a school for apprentices but eventually expanded to include a range of courses from mechanical drawing to shopwork and, eventually, any courses for which there were five or more employee applicants. Although Harvester and other companies succeeded in developing a generation of loyal workers, massive unemployment during the economic depression of the 1930s left millions of industrial workers devoid of any faith in their companies to provide guarantees of lifetime security, and so they turned to labor unions.

International Sunday School Union A large-scale affiliation of American and Canadian Protestant Sunday schools formed in the 1870s by evangelical ministers to unify the Sunday-school curriculum. Organized in 1817 as the American Sunday-School Union, its expansion to include Canadian churches and other evangelical organizations was prompted by the arrival of growing numbers of non-Protestant immigrants. The union sought to resolve the conflicts that had divided Protestant sects since the Reformation and to create a Protestant Christian America by making Protestantism and Americanism inseparable and interchangeable.

This they hoped to achieve by ensuring that all Sunday schools in the United States (even those of southern blacks) used and taught the same biblical materials every Sunday of the year.

(See also *EVANGELISM*.)

International Year of the Child An ambitious international effort to improve the lot of children everywhere on the planet. Proclaimed by a United Nations General Assembly resolution in 1976, the International Year of the Child began in 1979 with a relatively small number of countries implementing a variety of programs to improve the lot of their children—school milk for Kenyan children, establishment of legal centers for British children, children's nutrition centers in Sri Lanka, and so on. The United States pledged to make education one of its priorities for American children.

Internet A global collection of interconnected electronic commercial, government, academic and other communications networks (thus, the term "inter-net"), within which are linked tens of millions of individual computers around the world. Originally developed to link the American military to national, state and private scientific research and to educational institutions, the Internet used to depend on long-distance telephone lines to provide access to published and unpublished scientific, academic and commercial research data. By the late 20th century, commercial on-line services provided any individual computer or local network of computers direct access to the Internet and all its data, along with the capability of exchanging data and communicating, via conventional and wireless communications links. Most of the data and instructional materials available on the Internet are stored at host storage sites—Web sites—on a subnetwork, or World Wide Web, which harbors the largest collection of information in the world. The World Wide Web is a multimedia collection of

documents, texts, graphics, audio-video, three-dimensional animation and millions of other materials that can be copied and reused, sometimes without charge. The Web allows computer users to take audiovisual tours of historical sites and museums around the world, take a full range of school, college and university courses, and read electronically reproduced books and research papers at university and research libraries, as well as municipal, state and national libraries. Students can read almost any newspaper or magazine in the world on the Web; listen to local, regional, national and international radio programs; view video news programs 24 hours a day; and view concert, theater and opera productions. The Internet also provides instant messaging (IM) systems that allow computer users to "converse" in writing with other computer users, and it provides electronic mail (e-mail) systems for computer users to send mail to and receive it from other computer users. More than 90% of all elementary and secondary schools in America have access to the Internet, and two-thirds to three-quarters of all secondary school and college students use the Internet for their school work.

Until 1998, the U.S. government controlled and managed the Internet. At that time, it transferred management to a private, nonprofit organization, the Internet Corporation for Assigned Names and Numbers, or Iann. Established by the Department of Commerce with an international advisory body, Iann remains under the control of the U.S. government, which retains veto powers over all Iann decisions. In 2005, the U.S. government ordered Iann to require all schools, colleges, universities, libraries and other institutions with Internet communications facilities to overhaul their Internet computer networks to permit federal law enforcement authorities to monitor e-mail, IM, and other on-line communications. To break the U.S. monopoly on Internet control, other nations, including member states of the

European Union, are establishing their own Internets that might diminish the value of the existing Internet as a worldwide network.

(See also COMPUTERS; DISTANCE LEARNING; VIRTUAL CLASSROOM.)

internship A period of preprofessional, on-the-job training under the supervision of one or more experienced mentors. Internships usually follow the award of a professional degree at the conclusion of academic training but precede the award of a state or professional certificate permitting the trainee to practice. Normally lasting a year and offering only token monetary compensation, internships are required elements of training for the practice of medicine. Although not universally required, most state systems require internship equivalents before issuing teaching certificates.

Variously called CADET TEACHER, practice-teaching or induction programs, internships require trainees to work for a full school year in the classroom as teacher aides or substitute teachers, presumably under the mentorship and supervision of experienced teachers. Many such programs have come under criticism for their failure to provide interns with adequate instruction and supervision. Budget constraints, however, sometimes provoke school districts to put interns to work as unsupervised, full-time teacher replacements.

interview A private, formal, face-to-face meeting of two people to exchange information. It is the formality of the interview that distinguishes it from conventional social intercourse. The well-conducted interview should have a carefully defined purpose, be limited to three topics, and have a relatively strict underlying structure, consisting of an opening, a body and a conclusion, that can easily be outlined and documented. In education, there are a wide variety of interviews, the most common for teachers being the job, induction, performance evaluation and

grievance interviews with peers or superiors and the academic or behavioral evaluation interviews with students. The most common interviews affecting primary and secondary school students are those with teachers and guidance counselors about academic achievement, school behavior, course selection, career choices, college selection, social and personal problems, and school or college admissions.

Interviewing techniques are based not on conventional social skills but on broad-based skills learned in formal courses. Skilled interviewers are, essentially, problem solvers who must be able to put interviewees at ease by empathizing with them and demonstrating an interest in and knowledge of the problem under discussion.

(See also COLLEGE ADMISSIONS; COLLEGE ADVISOR; GUIDANCE.)

intramural programs Formal extracurricular activities, such as competitive sports, conducted exclusively "within the walls" of a school or college for its own students. Depending on the size of the institution and its student body, intramural activities may be as broad or broader than extramural activities involving competition with other schools or colleges. Thus, an intramural sports program may offer a complete program of intramural autumn, winter and spring sports, with a variety of teams in each sport based on age or ability. Intramural sports are often conducted as part of a required physical education program. Nonathletic intramural programs might include competing debating teams, chess teams, bridge teams and a variety of other competitions between students of the same school.

Iowa The 29th state admitted to the Union, in 1846. Its statewide public school system had been established 12 years earlier when Iowa was still a part of the Wisconsin Territory. Iowa has more than 1,500 public schools

for fewer than 490,000 elementary and secondary school students, of whom 10.5% are minority students and 6% live in poverty. The academic quality of the state's public schools ranks well above average for the nation, as measured by student proficiency in reading, mathematics and science. Indeed, eighth graders rank 12th in the nation in reading proficiency and 10th in math proficiency. For reasons that were unclear, however, fourth graders lagged behind at about 20th in the nation in both disciplines. The state has three public and 41 private four-year institutions of higher education, with a total enrollment of about 130,000. There are 16 public and three private two-year colleges, with a total enrollment of about 75,000 students. Graduation rates of 63% at four-year colleges are well above the national average.

Iowa Tests of Basic Skills (ITBS) One of the most widely used batteries of achievement tests for elementary and middle school students. Published by Riverside Publishing Co., Chicago, ITBS measures achievement in reading, arithmetic, spelling, language, science and social studies in grades three through eight. The Iowa Tests of Educational Development measure achievement of high school students in the same subjects but also include tests in social studies, natural sciences and literature interpretation.

I.Q. The abbreviation and popularly used term for INTELLIGENCE QUOTIENT, which is derived by dividing an individual's raw score (or mental age) on a standardized intelligence test by his or her chronological age and multiplying by 100.

Irving School District v. Tatro A 1984 U.S. Supreme Court decision that public school districts were obligated by the Education for All Handicapped Children Act of 1975 to render

quasi-medical services to handicapped students. The case involved the Irving, Texas, school system's refusal to insert a catheter twice daily to remove the urine of a young girl with spina bifida. The girl was too young to do so herself. The district claimed the law guaranteed disabled children only "free appropriate education" and nonmedical "related services," but the Court held that the procedure was no more difficult than any other performed by a school nurse during a routine day.

Islam The world's largest religion, with about 1.3 billion adherents, 97% of whom are in Asia and Africa. Islam was founded in Arabia in the early seventh century A.D. by Muhammed (c.570–632), when he heard a voice tell him, "You are the messenger of God." As he received subsequent revelations, he and his followers collected them into what became known as the Qur'an (or Koran), or sacred scriptures of Islam, which Muslims believe to be the revelations and words of God and, therefore, infallible. An uncompromisingly monotheistic faith that rejects the divinity of Christ, Islam demands individual "surrender to the will of Allah (God)," with strict adherence to certain religious practices that often conflict with accepted dress, behavior and political norms in American and other Western cultures—especially in public schools. The fiercely secular public school system in France, for example, bans all religious displays, including the five daily public prayers required by the Muslim religion and the wearing of head scarves and veils by Muslim girls and women. Previously of little consequence in the United States, Islam increased in importance suddenly in the 1950s, with the burgeoning black civil rights movement. Infuriated by the opposition of white-dominated Christian churches to racial integration, many black leaders turned to Islam, and, by 1965, the BLACK MUSLIM religious movement counted about 250,000 adherents—all of them Americans.

In subsequent decades, Muslim immigrants from Africa and Asia doubled the number of adherents to Islam by 1990 and doubled it again by 2000. There were an estimated 1.5 million Muslims in the United States in 2006, the vast majority of whom were foreign-born or first-generation American-born and had no affiliation to the African-American Black Muslim movement. The immigrant-based Muslim religion had spawned 1,200 mosques and hundreds of affiliated religious schools, and one university was in the planning stages. Of concern to many educators is the deeply ingrained opposition of Muslim fundamentalists to popular, democratic rule, which, they argue, is a formula for anarchy and moral decay. Emancipation of women, the fundamentalists also contend, is responsible for the breakdown of the family and the spread of permissive morality in the Western world.

isolation A form of elementary and secondary school punishment whereby a student is isolated from peers, either in a separate area of the classroom or outside the classroom. Ranked second in severity to corporal punishment, isolation in the typical one-room schoolhouse of centuries past took the form of standing or sitting in a corner of a classroom with one's back to the class and, occasionally, wearing a tall, conically shaped, paper "DUNCE" cap.

With multi-roomed school buildings, isolation usually takes the form of sending students to sit on a chair in the corridor outside the classroom door, where they are less of a distraction to other students. As an alternative, some students may be sent to sit by themselves in the principal's waiting room prior to an eventual scolding. Most recently, isolation has taken the form of DETENTION by oneself, during or after school. Like any punishment, the effects of isolation vary widely from student to student, and it remains the subject of much debate among educators and psychologists.

itinerant teacher A specially trained instructor who works in more than one school, providing special educational services to students and teachers. An itinerant teacher may teach a special subject such as art or music or a foreign language elective in several schools, none of which has enough students for a full-time instructor in those subjects. Some itinerant teachers are tutors of one or more individual students who, for whatever reason, need supplementary instruction in one or more subjects. Other itinerant teachers provide remedial or special education to slow or disabled students—again, in schools without enough students who need such services to warrant hiring a full-time teacher. Still another role of the itinerant teacher is that of a consultant to teachers who may need to learn special skills for teaching particular students, such as the learning disabled, in the general classroom situation.

Ivy League An unofficial, informal term, of obscure origin, referring to a group of costly and selective private colleges in the northeastern United States with above-average academic standards. Ivy League is said by some to refer to the four (Roman numeral “IV”) first colleges in the colonies to receive royal charters: Harvard (1636), Yale (1701), College of New Jersey (1746; now Princeton) and King’s (1754; now Columbia). But in 1693 the College of William and Mary, rather than Yale, became the second college to receive a royal charter. Nor is a sec-

ond explanation acceptable—of ivied walls as a symbol of age. In 1939, when the term apparently became current, there were many colleges in the United States a century old or more with walls equally abundant with ivy.

The first known publication of the term was by sports editor Stanley Woodward, who may have originated it in a column in a 1939 edition of the *New York Herald-Tribune*. It was at that time that the eight colleges of the Ivy League—Harvard, Yale, Princeton, Columbia, Brown, Dartmouth, Cornell and the University of Pennsylvania—formed an athletic conference. Although their teams participate in the larger Eastern Collegiate Athletic Conference in some sports, the Ivy League remains an eight-team football conference that bans athletic scholarships and requires member schools to maintain the same academic standards for admission of athletes as they do for all other students.

Whatever the origin of its name, the Ivy League has, historically, been the most influential and prestigious group of colleges and universities in the United States, and such institutions as Harvard, Princeton and Yale continue to rank among the top 10 institutions of higher education by almost any gauge. Often called “The Big Three” of the Ivy League, Harvard, Princeton and Yale have combined to give the nation more presidents, Supreme Court justices, senators, representatives, governors, university presidents and other American leaders than any other comparable institutions.

James, William (1842–1910) American philosopher and psychologist responsible for introducing modern psychology into the classroom and applying it to everyday teaching techniques. A popular lecturer and prolific writer, James's *Talks to Teachers on Psychology: and to Students on Some of Life's Ideals* (1908) had profound, widespread influence on the conduct of education at the elementary and secondary levels. That influence was both positive and negative, however. On the one hand, James believed deeply in individualism and the possibility for all children to rise above the class to which they were born. On the other hand, he also believed that once the schooling process ended and a person reached his 25th birthday, all possibilities for self-improvement ended abruptly. Moreover, whatever station in life such a person reached by that age was a direct result of the person's own efforts, and, for better or worse, he was entirely responsible for his own lot. "We are spinning our own fates, good or evil, never to be undone," James wrote in his classic *Principles of Psychology* (1890), his definitive, seminal text that was widely read by both the scientific world and the general public. It is believed that 90% of the teaching profession studied James's *Principles* in the two decades following its publication.

James believed that all individuals are "free agents" determining their own destiny: their handicaps, their poverty, their malnutrition,

their inadequate schooling and so on. But, he added, teachers and parents can influence each child's destiny by taking advantage of certain basic instincts with which each child is born. He defined instincts as inborn impulses that act in a particular way in response to certain stimuli. Some instincts are more transitory than others, and he urged teachers to take full advantage of periods when each instinct was "ripe" to instill proper behavioral habits in response to the particular instinct. Thus, he urged teachers to train children's instinct of acquisition by encouraging students to start collections of various kinds. He also suggested that teachers use contests, rewards and prizes to satisfy children's instincts of rivalry and competition.

The son of philosopher/author Henry James (1811–82) the elder, James was the grandson of a successful merchant and was, therefore, born to wealth in New York City. As a youngster, he traveled extensively in Europe with his family. With his younger brother Henry (1843–1916), the future novelist, he was educated by private tutors. A victim of chronic morbidity and depression, William James eventually graduated from Harvard College and Harvard Medical School and, in 1870, was appointed a philosophy instructor at his alma mater. In 1880, he shifted to psychology and created the nation's first experimental laboratory for psychological research

at Harvard. Over the next decade, he traveled extensively in Europe, meeting with leading psychologists and philosophers and gradually putting together his monumental *Principles of Psychology*. Also interested in parapsychology, James was the first to posit the existence of a variety of dimensions of human consciousness, beyond everyday experience and Freud's single unconscious, dream level. Once again beset by illness, James ended his Harvard teaching career in 1907.

James I (1566–1625) The first Stuart on the English throne (1603–25), who was instrumental in the first effort to establish educational institutions in the American colonies. That effort began in 1617, with a letter to Anglican archbishops asking them to solicit contributions from parishioners throughout the realm to erect in the new Virginia colony "some churches and schools for the education of the children of those barbarians," by which the king meant the Indians, not the colonists. The effort "to build a college at Henrico," Virginia, was designed less to encourage education than to make Virginia a more attractive destination for English colonists who might turn the colony into a profitable property for the king. An Indian massacre of colonists in March 1622, however, ended the HENRICO COLLEGE project and the king's enthusiasm for educational projects in the colonies.

Jefferson, Thomas (1743–1826) American revolutionary leader, political philosopher, social reformer, author of the Declaration of Independence, third president of the United States (1801–09), colonial legislator, state governor, founder of the University of Virginia and, unquestionably, the "patron saint of American popular education," as well as the "author of the American Revolution."

The son of a wealthy Virginia planter, Jefferson received the finest education available

in the colonies, first from private tutors, then at the COLLEGE OF WILLIAM AND MARY, where he studied history, philosophy, science, literature and in 1767, earned a law degree and was admitted to the bar. Joining former classmates in the political world of the Virginia gentry, he was elected to the Virginia House of Burgesses. In 1774 he gained national fame as a political theorist by drawing up a *Summary View of the Rights of British America* as instructions for Virginia's delegates to the First Continental Congress. He drafted the Declaration of Independence in June 1776 for the Second Continental Congress. By 1778, he had become not only a champion of freedom but also a champion of education, which he deemed essential to the preservation of freedom. "If a nation expects to be ignorant and free, in a state of civilization," he would later say, "it expects what never was and never will be."

To that end, he drafted a "Bill for the more General Diffusion of Knowledge," which called for universal public education in Virginia, and which he later hoped would provide the basis for a similar national educational system. The bill divided Virginia into "hundreds," each with a state-run school where all free children—male and female—would be taught reading, writing, common arithmetic and history (ancient, English and American), for three years at public expense from taxes and at private expense thereafter. The bill also called for 20 state-run grammar schools in Virginia, where the brightest lower-school students would learn Latin, Greek, English grammar and more advanced arithmetic. The wealthy were to pay tuition, the poor would be supported at public expense but be reexamined annually "to weed out the least promising." The 10 surviving scholarship students, along with all students who could afford the costs, would proceed to the College of William and Mary for three years, where, once again, the poor would study at public expense. The bill

also called for establishing a great public reference library in Richmond.

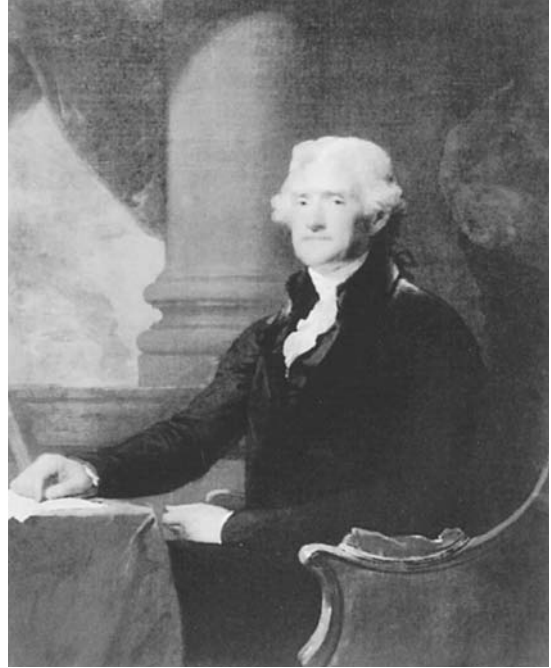
Jefferson wrote:

The ultimate result of the whole scheme of education would be the teaching [of] all the children of the state reading, writing, and common arithmetic; turning out ten annually, of superior genius, well taught in Greek, Latin, geography, and the higher branches of arithmetic; turning out ten others annually, of still superior parts, who, to those branches of learning, shall have added such of the sciences as their genius shall have led them to; the furnishing to the wealthier part of the people convenient schools at which their children may be educated at their own expense.

The general objects of this law are to provide an education adapted to the years, to the capacity, and the condition of everyone, and directed to their freedom and happiness.

The bill provided no educational opportunities for blacks, either free or slave, despite Jefferson's opposition to slavery.

In 1779, Jefferson proposed two companion measures. One would have reformed William and Mary by expanding the curriculum to include a wide variety of secular courses in art, history, philosophy and modern languages and by placing it under public control. The second was a "Bill for Establishing Religious Freedom," which proposed disenfranchising the church and making Virginia a secular state. To Jefferson, his bill to make "all men free to profess, and by argument to maintain, their opinions in matters of religion" was inextricably tied to his bill to provide universal public education. At the time, the church controlled all education, and universal public education would have given the church control of all children's minds. By giving the state control of education, schools would teach students a variety of truths that would free their minds to choose whatever



Thomas Jefferson (Library of Congress)

churches they preferred. Only the religious freedom bill passed the legislature, and Virginia would not open its first free, public primary schools until it drafted a new constitution in 1851. Jefferson's bill was defeated by rich planters who rejected the idea of paying taxes to educate the poor. Ironically, the College of William and Mary, which was supported initially by the wealthy, closed during both the Revolutionary and Civil Wars, went bankrupt in the 1880s and eventually became a public institution to survive. It remains a state college today.

Jefferson also tried and failed to win support for universal public education at the national level, despite the concurrence of such popular national leaders as John Adams, James Madison, Benjamin Franklin, Benjamin Rush and George Washington himself. Jefferson, who served as vice president for four years

under John Adams before assuming the presidency for eight years, had proposed a system of national education that called for two lower levels of education, for children five to 10 and 10 to 18; a college in each state for qualified students; and a national university, graduation from which would be required of all persons aspiring to state or national public office, including state governorships, Congress and the presidency.

After leaving national office in 1809, Jefferson returned to his home in Monticello, Virginia, where he remained a behind-the-scenes power in Virginia politics. Although he continued pressing for a state system of free, universal public education, he succeeded only in obtaining a bill that provided for free education of the poor in such elementary schools as already existed. To that relatively meaningless legislation, however, his close friend legislator JOSEPH CARRINGTON CABELL “engrafted” a little noticed rider providing for creation of a state university. In August 1818, a gubernatorial commission chaired by Jefferson selected Central College in Charlottesville as the site for the new institution and adopted an organization and program that Jefferson had drawn up the previous year. Jefferson’s goal for the new university was “to form the statesmen, legislators and judges, on whom public prosperity and individual happiness are so much to depend . . .”

Jefferson’s curriculum—by far the broadest of any university in the United States and most of the world at the time—did away with divinity studies and offered 10 broad areas of study:

- Ancient languages (Latin, Greek, Hebrew)
- Modern languages (French, Spanish, Italian, German, Anglo-Saxon)
- Pure mathematics (algebra, fluxions, geometry, architecture)
- Physico-mathematics (mechanics, statics, dynamics, pneumatics, acoustics, optics, astronomy, geography)
- Natural philosophy (chemistry and mineralogy) and botany (including zoology)
- Anatomy (including medicine)
- Government political economy
- The law of nature and nations, and history
- Municipal law
- Ideology (grammar, ethics, rhetoric, belles lettres and the fine arts).

Jefferson’s dream for a great university was translated into law the following year, and six years later into the University of Virginia, with Jefferson as rector, or chairman of the board of visitors (the trustees). He died a year later, but left a university that became the model for every American university until the Morrill Act of 1862 created a new type of state university dedicated to practical skills needed in agriculture and industry. Although he never saw his dream of universal public education fulfilled, Jefferson’s constant assertion of his belief in the inextricable tie between education and freedom inspired reformers in every region of the United States to develop state public school systems.

Jesuits, or Society of Jesus A Roman Catholic order of men devoted to education within the context of religious teachings; among the first missionaries to establish schools in the New World. Founded by St. Ignatius of Loyola in 1534, the Jesuits had little influence or success in the predominantly Protestant, English-speaking colonies. Puritans viewed them with passionate hatred as purveyors of “popish superstition and idolatry” who threatened individual freedom by “passing lightly over the improvement of justice, and the value of liberty in favor of the constant nurture of blind obedience to authority.” The Jesuits nevertheless managed to found a “college” in Newtown, Maryland, in 1677—probably the first school in that state. Although technically the second oldest college, after Harvard and ahead of the College of William and Mary, it was nothing

more than a grammar school, and a college in name only.

In contrast, Jesuit educational efforts in the French and Spanish colonies were far more successful. But because there were few French or Spanish children to teach, most of these efforts were directed at conversion of Indians. Unlike the English settlers, who arrived with families to colonize the New World, most of the French and Spanish settlers were soldiers and men of commerce seeking wealth from minerals (in the case of the Spaniards), from furs (in the case of the French) and from other riches of the New World. Although Spanish Jesuits made tentative efforts to establish missions in northern Florida, their principal efforts were west of the Mississippi, among the Indians of Texas, New Mexico and California. Similarly, the educational efforts of French Jesuits were directed at converting (and winning the political loyalties of) the Algonquians and Iroquois north of New England and thus halting the British advance across North America. Although Jesuit influence remained strong in New France and, later, in Canada, Jesuit influence in the Protestant-dominated English-speaking colonies of the future United States remained small until the first wave of Catholic immigrants arrived prior to the Civil War.

(See also ROMAN CATHOLIC CHURCH; CATHOLIC SCHOOLS.)

Jewish education A wide range of education offered in a variety of about 600 independent and synagogue-related schools that cater to about 200,000 Jewish American children, or 20% of the Jewish school-age population. There are three basic types of Jewish educational institution: supplementary schools, day schools and colleges. Supplementary schools include religious schools and a wide variety of Hebrew schools that combine studies of Jewish culture and history, Jewish religion, the Hebrew language and the rites of the Bar and Bat Mitz-

vah, or the assumption of adult responsibilities and obligations. Supplementary schools may meet on Sundays only, on Saturdays and Sundays, or on weekday afternoons, according to the preference of the individual school board.

Jewish day schools are of two types: Orthodox and non-Orthodox. The latter are conventional American schools that complement the full range of secular education with courses in Jewish culture, Judaic (religious) studies and Hebrew. Orthodox Jewish day schools, on the other hand, offer a strictly religious, elementary and secondary school education held in gender-segregated yeshivas where instruction centers on Hebrew and sacred texts.

Although there is an array of theological seminaries, there are only two Jewish colleges in the traditional American sense: Brandeis University, an independent, liberal arts institution founded in Waltham, Massachusetts, in 1948, and Yeshiva University, which was founded in New York City in 1886. Yeshiva is an independent, liberal arts institution offering undergraduate programs through Yeshiva College for men, Stern College for women, and Sy Syms School of Business. Also, there are seven graduate schools. In addition to conventional secular education, students may pursue a dual program of undergraduate liberal arts or business studies and courses in Hebrew language, literature and culture.

Job Corps One of two work-experience programs established for low-income adolescents and post-adolescents by the ECONOMIC OPPORTUNITY ACT, or WAR ON POVERTY, in 1965. Designed for young men and women between the ages of 16 and 24, the Job Corps is a \$1.5-billion-a-year residential program in which more than 60,000 members live away from home at more than 100 urban and rural government centers. Restricted to high-school dropouts and unskilled students from economically depressed areas, the program offers

students free lodging, clothing, meals and health care, along with basic academic and vocational training, counseling, a stipend of \$5,000 to \$6,000 and job placement assistance over eight months. Operated by the U.S. DEPARTMENT OF LABOR, the Job Corps provides about 1,000 hours of academic and job training to each student, alternating a week of academic instruction with each week of vocational training. The average student enters the program with only sixth-grade academic skills. To graduate, students must earn a GENERAL EDUCATIONAL DEVELOPMENT certificate—the equivalent of a high school diploma—and demonstrate proficiency in one of a wide range of rural or industrial areas of skill, such as welding, retail sales, data entry, conservation work or the culinary arts. Although graduates earn an average of 20% higher in the job market than non-participants, the graduation rate is low, averaging well under 50%.

(See also NATIONAL YOUTH CORPS.)

job retraining Any vocational education program—usually for adults—designed to convert obsolescent or unusable skills into usable ones. A basic element of employee training programs at many major American corporations, job retraining of proven, loyal, long-time employees has been found to be more cost-effective than laying them off and hiring new employees with the required skills. The advantages of retaining and retraining such older employees can include improved worker morale and company loyalty (in return for company loyalty to its old workers), lower absentee and lateness rates, and fewer on-the-job errors that might reduce product quality. Although most company-sponsored job retraining programs are financed entirely by company funds, some are subsidized by a grab bag of federal and state job retraining programs aimed not only at reducing unemployment but also at preventing industry from moving from low-skilled to higher-skilled labor areas.

Johns Hopkins University A privately endowed, coeducational university founded in Baltimore, Maryland, in 1876 as the first university in the United States offering only graduate studies and research. Often called the first true university in the Americas, it was planned as an American imitation of the German universities of the time—recognized as the world's finest—that would draw the world's top scholars as instructors and students.

The university was founded with a bequest from Quaker merchant Johns Hopkins (1795–1873), who willed \$7 million to found a university and hospital. Influenced by Harvard University president CHARLES W. ELIOT, himself a great educational reformer, the university's first board selected University of California president DANIEL COIT GILMAN as president of their new enterprise. After traveling to Europe and across the United States, Gilman borrowed the German concept of the university and decided to establish a school devoted solely to graduate studies. He recruited a small but eminent group of scholars and teachers to constitute the first faculty and a group of 20 brilliant college graduates to whom he offered America's first university-financed, graduate research FELLOWSHIPS.

What raised the university to national and international prominence, however, was the work of pathology professor William Henry Welch, who revolutionized the study of medicine in the United States. At the time, medical education consisted of one to three years of lecture and study at proprietary medical schools organized and staffed by local practitioners. Welch developed a new, four-year medical curriculum—the first in the United States. It consisted of two years of laboratory study of preclinical subjects, such as anatomy, physiology, pharmacology and pathology, followed by two years of in-hospital study of the clinical subjects of medicine, surgery and obstetrics. Welch helped found both the Johns Hopkins

Hospital in 1889 and the Medical School in 1893, of which he was the first dean and which he linked inextricably to the hospital by recruiting such distinguished physician/researchers as Sir William Osler (1849–1919) and the renowned surgeon William S. Halsted (1852–1922) to staff both institutions.

He thus made the hospital's first great physician/teachers central to the life of the medical school, but made the medical school's laboratory and library facilities equally central to the research needs of the hospital and its physicians. Welch strengthened those ties by creating an appointment system that made professors in the medical school serve as heads of their departments in the hospital. The appointments thus made them responsible for delivery of medical services as well as for medical instruction, and the arrangement created the first so-called teaching hospital in the United States. Their combined duties led to their integrating advanced medical education with practical hospital routine, as they led their students on daily rounds of hospital wards, translating student textbook and laboratory knowledge into actuality. The teaching standards and methods—and the four-year medical degree—established at Johns Hopkins made it a model for the many teaching hospitals that would spring up in major cities across the United States.

The undergraduate college and the evening college were founded almost as afterthoughts, to help supply the university's graduate schools with a pool of worthy scholars. The evening college is one of the nation's oldest part-time adult education enterprises. Johns Hopkins has never ceased pioneering educational innovations. In 1971, psychology professor Julian C. Stanley created a program for mathematics geniuses as young as 14 to enroll on campus and complete their education at their own pace. Some skipped high school entirely and completed their doctorates by the time they

were 20. One of the first programs for the GIFTED, it served as a model for dozens of other American colleges that established programs for gifted students in cooperation with nearby high schools. Johns Hopkins today has five undergraduate schools for the arts, sciences and engineering, with more than 4,000 students. Its eight graduate schools, including its schools for the study of medicine, nursing, public health, international studies and music (the Peabody Institute), have more than 1,500 students.

Johnson, Lyndon B. (1908–1973) Thirty-sixth president of the United States and lifelong champion of education as the most fundamental means to achieve racial and social equality and economic productivity. After a year of teaching high school following his college graduation, the Texas-born Johnson entered government service in 1931 and served variously as Texas director of the NATIONAL YOUTH ADMINISTRATION for two years, as a member of the House of Representatives for 11 years, as a Navy officer during World War II, as a senator for 12 years, as vice president of the United States for three years and as president for five years. Johnson's election as Senate Democratic majority leader in 1955 during the administration of Republican President DWIGHT DAVID EISENHOWER could have produced political gridlock in Washington. Instead, Johnson established one of the most effective bipartisan working relationships in American history, working cooperatively with Eisenhower to secure passage of the Civil Rights Acts of 1957 and 1960, and supporting Eisenhower's use of troops in Little Rock, Arkansas, in 1957 to enforce desegregation in the Democratic south.

Laying claim to the Democratic nomination for the presidency in 1960, he had to settle for the vice presidential spot after a bitter convention battle with John F. Kennedy. After Kennedy's assassination, Johnson picked up the

presidential reins and won passage of the CIVIL RIGHTS ACT OF 1964, which Kennedy had proposed a year earlier. A landmark act in the history of both civil rights and education, it empowered the attorney general to take legal action to achieve school desegregation. It specifically outlawed discrimination in any program receiving federal aid, and it ordered an end to all federal aid to programs and schools guilty of discrimination of any kind. It barred discrimination in most public accommodations and barred discrimination in most employment, including teaching.

Elected by a large majority in 1964, Johnson continued on his crusade for educational reforms, sending to Congress and winning passage of four of the most far-reaching bills ever to affect education. Ostensibly marking the declaration of an "unconditional war on poverty," the first of the four bills was the ECONOMIC OPPORTUNITY ACT OF 1964, which created programs to educate millions of undereducated, disadvantaged poor children through HEAD START, the JOB CORPS and the Neighborhood Youth Corps.

The following year, Johnson won passage of the ELEMENTARY AND SECONDARY EDUCATION ACT OF 1965, which authorized federal assistance to economically disadvantaged school districts, and the HIGHER EDUCATION ACT OF 1965, which authorized creation of a huge loan program for students attending two-year and four-year colleges. To cap off his efforts, he won passage of the NATIONAL FOUNDATION ON THE ARTS AND HUMANITIES Act of 1965. The act stated that "a high civilization must not limit its efforts to science and technology alone but must give full value and support to scholarly and cultural activity." It proceeded to do just that with federal funding for the arts and humanities.

Johnson-O'Malley Act of 1934 The first law ever to provide federal funds for public

school education of American Indian children. At the time, Indian children were barred from most nearby public schools because they lived on reservations, outside the boundaries of adjacent school districts. Those who sought education were automatically transported, sometimes brutally and without parental consent, to far-away INDIAN BOARDING SCHOOLS of often unsatisfactory academic quality. The Johnson-O'Malley Act allowed the Department of Interior to draw up contracts agreeing to pay any state or territory for the "education, medical attention, agriculture assistance, and social welfare" of Indians within that state or territory.

Designed to open access to local public schools for Indian children, the law had no enforcement provisions to combat local prejudice or force recalcitrant white school districts to admit Indian children, and the disenfranchisement of Indian children continued until the 1970s, when Indian leaders demanded and won reforms in the BUREAU OF INDIAN AFFAIRS and the right to govern the education and education expenses of their own children. Funds paid under the Johnson-O'Malley Act and several other comparable pieces of legislation are now controlled entirely by Indian organizations.

John Wanamaker Commercial Institute A pioneer CORPORATION SCHOOL started in 1897 to improve employee skills and overall education at the then-huge John Wanamaker and Company department store chain. With few compulsory education laws in place and waves of non-English-speaking immigrants arriving in the United States, many companies found themselves saddled with a growing number of illiterate and inefficient, albeit eager, beginning workers at the very time that technological changes required more highly skilled employees.

To John Wanamaker, the answer lay in founding a school of business for his employees to give them "daily opportunities to obtain

a working education in the arts and sciences of commerce and trade." The institute offered far more, however, including reading, writing, arithmetic, English, spelling, stenography, commercial geography, commercial law and business methods. The institute had 24 teachers, some of them store executives, others Philadelphia schoolteachers. New workers spent two mornings a week in classes; older workers, two evenings a week after a generous free dinner in the store cafeteria. In addition, younger workers were offered exercise classes to teach them "discipline, organization, precision and obedience" and give them "health lessons of muscular training that give bodily strength without which successful mental work is impossible."

Wanamaker was more than pleased with the results of his institute. "Unintelligent and wasteful labor has lessened. The wisdom of cooperation and mutual helpfulness has been recognized. Knowledge of merchandise, its production, distribution and uses has been increased. Principles of control and government and organization have developed." The institute was so successful it became a model for other companies, and Wanamaker's company became one of the founding member companies of the National Association of Corporation Schools.

Joint Council on Economic Education

An independent, nonprofit organization founded in 1949 to promote and improve the quality of economics education in the United States. Based in New York City, the council maintains centers across the United States to provide instructional materials, consultant services and teacher training workshops. The council's work is a response to what it perceives as "economic illiteracy" in the United States. According to the council, only about 25% of American secondary schools offer economics courses, which are taken by fewer than 10% of the students in such schools. Overall, fewer

than 5% of American high school students ever take an economics course and only half of all social studies teachers have ever taken one or more economics courses.

Joplin Plan A system of upper-level reading instruction that groups children according to their reading ability and achievement levels, regardless of their age or grade level. Developed in Joplin, Missouri, in the 1960s, the scheme allows the placement of students of any age into any grade level from grade three through seven or eight. The plan was the center of considerable controversy for allowing some schools to substitute public humiliation of slower readers for more costly individualized remediation.

Junior Achievement A nonschool business-education program for secondary school students, akin to the 4-H programs in agricultural education. Indeed, JA was formed in 1919 by two corporation executives who sought to create an urban counterpart to 4-H, by teaching 8- to 12-year-olds about free enterprise and by helping them form and operate their own businesses successfully. Later redesigned for secondary school youngsters, JA matches groups of about 20 youngsters with a volunteer adult advisor who helps them form, operate and liquidate their own businesses. JA companies run the range of business categories, although most tend to concentrate on manufacturing such products as T-shirts that can easily be sold in the school community. Student participants meet about twice weekly to elect officers, bring the books up to date, produce and package their products and conduct other company business. At the end of the school year, they liquidate their business, distributing dividends to stockholders and profits to company workers. Subsidized exclusively by the local business community, JA programs involve hundreds of thousands of youngsters across the United States and tens of thousands of volunteer

advisors. JA also sponsors weekly seminars in high schools and colleges and summer work projects for disadvantaged youngsters.

junior college A two-year, postsecondary institution of higher education with programs leading to ASSOCIATE DEGREES in the arts and sciences. The forerunner of COMMUNITY COLLEGES and often used as a generic term for all two-year colleges, the junior college differs from the community college in that it tends to be private and to accept, and provide boarding facilities for, students from beyond its immediate geographic area. Junior colleges also tend to focus on the arts and sciences and offer no vocational or technical studies.

Some junior colleges evolved after the Civil War as special-purpose schools for nursing, mechanics and other occupational skills that required only two years of postsecondary education. Others emerged from a process of institutional growth or shrinkage. Thus, some academies grew into colleges while some colleges, which lasted only three years then, either contracted into two-year colleges or expanded into four-year institutions. At the time, schools of medicine, law and other professions required only two years of college for admission, and junior colleges provided a perfect academic bridge from high school for future professionals. After professional schools imposed bachelor-degree requirements at the end of the 19th century, junior colleges assumed new roles in American education. Some served low achievers who had not fulfilled their secondary school academic requirements for admission to four-year colleges. Junior colleges offered low achievers the opportunity of obtaining the needed qualifications and then transferring into the second or third year of four-year colleges, where they could complete their work for a bachelor's degree.

Other junior colleges served the growing demands of women for higher education. At

the time, most four-year colleges were all-male institutions that barred women. The few four-year colleges for women were selective schools that admitted only the most brilliant scholars. Junior colleges offered an alternative: two years of so-called finishing school that offered a broad-based education in the liberal arts and 20th-century culture—the equivalent of what had been, during the early 19th century, the standard college education for most men. After World War II, the emergence of low-cost, public two-year community colleges cost private junior colleges many of their students. As the number of community colleges and branch campuses more than tripled to more than 1,000 and as public four-year colleges expanded the number of their campuses and converted to open enrollment, the need for nonprofit junior colleges declined and their number shrank from nearly 200 to about 140 by 2000. In addition, a new category of two-year college appeared in the mid-1990s to compete with junior colleges: the for-profit two-year school, which offered on- and off-campus education and on-line DISTANCE LEARNING more conveniently and at far lower costs than junior colleges. Indeed, by 2005, the number of two-year proprietary colleges had soared to more than 600.

Junior Great Books Discussion Plan A program of the Great Books Foundation of Chicago, Illinois, to expose students from second grade through high school to the “great books of the Western world.” Made up of a series of paperbacks, with short stories, poetry, essays and other works, the plan also offers materials to help improve teacher skills as discussion leaders. Used in many programs for gifted students, the plan emphasizes story interpretation based on shared inquiry in free-wheeling classroom discussions that encourage student understanding and love of literature. The Junior Great Books was an offspring of the Great Books Program, a curriculum developed

in 1947 that was based on the study of classical works of philosophy, literature, history and science that some educators considered the foundation of all human knowledge. Developed by University of Chicago President Robert M. Hutchins and his presidential assistant, philosophy professor MORTIMER J. ADLER, the Great Books Program was a modern variation of the traditional CLASSICAL EDUCATION curriculum developed between the 15th and 18th centuries. Hutchins and Adler added works of modern writers and philosophers to those of the great writers of ancient Greece and Rome. They started the junior program 15 years later as an appropriate adaptation for younger readers.

junior high school A secondary school encompassing grades seven and eight and sometimes nine. Sometimes used as a synonym for a middle school, the true junior high school differs from the middle school in that it is organized and administered apart from, but almost exactly like, any high school. Now a disappearing entity, the junior high school was the predecessor institution of today's MIDDLE SCHOOL but, unlike the latter, did not alter the high school approach to education to take into account the sharply different needs of early adolescents.

Junior Year Abroad A college-level program in which students spend their third year of study at an accredited college in a foreign country. Junior Year Abroad programs vary from college to college, depending on official enthusiasm. Some colleges provide direct sponsorship of such programs, maintaining formal or informal relations with foreign colleges and helping students make travel, living and other arrangements for their year abroad. Other colleges leave all formal arrangements—applications, lodging, travel and so on—to individual students. Regardless of the actual sponsor, the student's college must approve the year's leave,

approve the foreign college and accept for credit the courses of study the student intends to take overseas.

juvenile court An institution for judging youths accused of crimes and misdemeanors. Juvenile courts have had harsh consequences for American public school education by returning to their home communities hundreds of thousands of troubled youths who had previously been incarcerated in special residential institutions. Until 1899, juvenile offenders were tried in adult courts, which sentenced the guilty to specific terms in special prisons for the young called REFORMATORIES, or reform schools, which were charged with both educating and rehabilitating their charges. Although no more effective than prisons for adults, they represented an advance over the practice, common until the 1820s, of incarcerating young and old prisoners together. Nevertheless, the hundreds of thousands of homeless children, roaming American city streets and committing crimes to survive, provided harsh evidence that reform schools were neither rehabilitating nor educating their charges.

By the end of the century, G. STANLEY HALL's child-study movement had given Americans a new perception of children as "innocents." At the same time, the homeless children on American streets gave rise to a small army of adult "child savers" who worked with children either directly, by educating, clothing and feeding them in settlement houses, or indirectly, by working for legal reforms. One of these was JULIA LATHROP, who developed the concept of a juvenile court whose decisions would be based on the theory that, wherever possible, children are better off left in their own homes, regardless of conditions there. Lathrop was responsible for encouraging legislation that created the nation's first juvenile court, in Chicago in 1899. Denver opened a second the same year. Instead of formal courtrooms, juvenile court was held

in a special, informal atmosphere by a special judge trained in child psychology. Judges worked closely with special probation officers trained in social work and who represented the interests of each child, conducting investigations of the child's circumstances and making recommendations for the disposition of each case. For children found guilty and returned to their homes, the probation officers collaborated with the child's family and school authorities in overseeing the child's formal schooling.

The programs never produced the anticipated reductions in juvenile crime, but they did produce widespread educational "reforms" by forcing public schools to absorb and adapt to the presence of disruptive, troubled youngsters.

juvenile delinquency The committing by children of acts that would be considered felonies, punishable by fines and imprisonment, if committed by adults. About 25% of all persons arrested for crimes in the United States are under 18 years of age. Experts on juvenile crime believe that minor criminal behavior such as vandalism, shoplifting, underage drinking and drug use is grossly underreported. Because the vast majority are usually returned to their communities and the custody of their parents or guardians, juvenile delinquents present a special problem for public schools. Often ill-equipped or unequipped to handle troubled, disruptive youngsters, public schools often have no choice but to admit delinquent children into their regular classrooms. Delinquents have inordinately high rates of school absenteeism, show little interest in or motivation at school and are usually so unprepared for schoolwork when they do come to class that they engage in

disruptive behavior. Indeed, in 1999, gun-wielding students carried classroom disruption to its ultimate by invading classrooms across America and committing mass murder. Two students at Columbine High School in Littleton, Colorado, shot and killed 12 students and a teacher and wounded almost two dozen others before killing themselves on April 20, 1999. A month later, a 15-year-old gunman wounded six students at a high school in Conyers, Georgia. In December, a Fort Gibson, Oklahoma, middle school student opened fire with a semi-automatic handgun and wounded five students, and in March, 2001, two students at Santana High School, Santee, California, shot and killed two students and wounded 13 others. The series of killings had at least one positive effect on America's schoolchildren—namely to break the pervasive code of silence against reporting fellow students to school authorities for rule violations. After the Santee killings, tips by students led to arrests in five California schools for planning violent attacks on students or teachers.

Detention and other traditional in-school corrective measures have little effect on juvenile delinquents. In general, school performance of juvenile delinquents is so poor and their presence so disruptive that many educators and child advocates believe they should be removed from conventional schools and placed in special nonresidential or residential facilities. Their presence, say these educators, is another example of society demanding services that public schools are neither prepared nor equipped to provide. Some cities have responded by opening so-called INTERMEDIATE day schools offering special educational facilities for troubled youth.

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Kansas Thirty-fourth state admitted to the Union, in 1861. Kansas's first schools were religious missions for the Kansa Indians in the 1830s. The territorial legislature provided for the first free public education of settlers' children in 1855 and chartered the first college two years later. The state's nearly 470,000 children attend more than 1,400 public elementary and secondary schools. Academic proficiency of students ranks well above average for the nation, with Kansas fourth graders finishing second in the nation in math proficiency in the 2005 national tests, despite a poor showing (25th) in reading proficiency. Eighth grade scores ranked 11th and 13th, respectively, in math and reading proficiency. About 12.3% of the state's children are minority students, and the same percentage lives in poverty. The only serious blemish on the public school system's relatively fine academic program is the continuing struggle by Christian fundamentalists against inclusion of the theory of *EVOLUTION* in the public school science curriculum. In 1999, a fundamentalist majority on the state board of education ordered all mention of evolution deleted from science courses. Widespread public backlash, however, stripped fundamentalists of their majority, and in 2001, a new board restored the teaching of evolution in all public schools. Since then, the battle has continued to undermine the science curriculum, and few science

teachers know what they will be imparting to their students from year to year.

The state has an extensive system of area vocational-technical schools that offer a broad range of training in crafts and technology for agriculture, business and industry. Kansas has more than 60 colleges and universities, nine public and 23 private four-year institutions and 27 public and six private two-year institutions, with about 165,000 undergraduates and a graduation rate of less than 50%.

The state capital of Topeka became the center of world attention in 1954, with the U.S. Supreme Court's decision in the landmark case of *BROWN V. BOARD OF EDUCATION OF TOPEKA*. The Court found the city's "separate but equal" elementary school facilities inherently unequal and therefore unconstitutional. Terming segregation a violation of the *CONSTITUTION OF THE UNITED STATES'* guarantee of equal protection under the *FOURTEENTH AMENDMENT*, the decision set in motion the *DESEGREGATION* of schools throughout the United States. Ironically, Topeka had already desegregated its schools when the case was settled.

Kappa Delta Pi An honorary society of more than 50,000 men and women in education. Founded at the University of Illinois in 1911, it is open to upper-level and graduate students of education who rank in the top 20% of their classes academically.

Keller, Helen Adams (1880–1968) American author, lecturer and champion of special education for the blind, deaf and mute. Born in Alabama, Keller was left with all three handicaps after an illness at the age of 18 months. After examining her, ALEXANDER GRAHAM BELL, the inventor and pioneering teacher of deaf children, sent the seven-year-old Keller to Anne (a diminutive of Joanna) Sullivan (1866–1936), a remarkably gifted teacher at Boston's Perkins Institution for the Blind, headed by Bell's son-in-law. Miss Sullivan, who later married author John Macy (1877–1932), remained Keller's teacher and companion from March 2, 1887, until Sullivan's death in 1936.

Within months of her initial training, the brilliant young Keller learned to feel objects and associate them with words that Sullivan's finger spelled out on the child's palm. Then she learned to read sentences by feeling raised words on a large board and then to make her own sentences by arranging the words herself. Young Helen spent the following school year, 1888–90, at Perkins learning BRAILLE and subsequent years at Boston's Horace Mann School for the Deaf learning to speak by feeling and then imitating Sullivan's relative tongue/lip positions and motions and making sounds. She learned a form of tactile lip reading by placing the fingers of one hand on Sullivan's lips and throat, while feeling the words with the other.

At 14, Keller enrolled in New York City's Wright-Humason School for the Deaf. At 16, she moved to the Cambridge School for Young Ladies in Massachusetts; after graduating, she enrolled at Radcliffe College, graduating cum laude four years later, in 1904, with skills never before achieved by anyone so severely handicapped. Encouraged by pioneering editor Edward W. Bok (1863–1930), she began writing articles on blindness, a subject editors seldom dared publish because of its association in the public mind with venereal disease and,

therefore, the worst kind of sin. In the dozen years that followed her graduation from Radcliffe, Keller changed that public perception with a spate of articles for such best-selling magazines as *Ladies' Home Journal*, *McClure's* and *Atlantic Monthly* and with five remarkable books: *The Story of My Life* (1902), *Optimism* (1903), *The World I Live In* (1908), *Song of the Stone Wall* (1910) and *Out of the Dark* (1913). In 1905, Sullivan married author John Macy, who edited the last three of those books, but the strain of the three-way relationship led to the couple's divorce in 1913.

In 1913, Keller, still accompanied by Sullivan, began a career of lecturing that took her around the world and made her a universally beloved and admired figure. Her lectures not only helped create a \$2 million endowment for the American Foundation for the Blind, they also were instrumental in freeing the deaf, blind and other physically handicapped people from prisonlike asylums. She was also instrumental in changing public and government attitudes toward the blind and deaf and demonstrating that the intellectual and physical potential of the handicapped was no different from that of the nonhandicapped. For her work, she was awarded the Presidential Medal of Freedom in 1963. The remarkable educational, emotional and psychological travails of Anne Sullivan and Keller's equally remarkable triumphs were documented in the award-winning play and subsequent film *The Miracle Worker*.

Kelley, Florence (1859–1932) Pioneer social reformer, champion and campaigner for child labor and compulsory education laws; instrumental in creation of the federal Children's Bureau in 1912 to study the plight of American children. Born in Philadelphia, Kelley worked at two of the most influential early settlement houses—HULL-HOUSE in Chicago and HENRY STREET SETTLEMENT in New York. In 1902 she founded the National Child Labor

Committee, which worked to obtain stricter enforcement of state CHILD LABOR and compulsory school ATTENDANCE laws. A co-founder of the NATIONAL ASSOCIATION FOR THE ADVANCEMENT OF COLORED PEOPLE, she was author of the influential books *Some Ethical Gains through Legislation* (1905) and *Modern Industry* (1913).

Kellogg Foundation, W. K. A philanthropic organization that awards about \$250 million in grants annually to higher education, youth development, rural development and health care. Founded in 1930 by cereal tycoon Will Keith Kellogg (1860–1951), the foundation is second only to the FORD FOUNDATION in assets. It concentrates its educational work on programs to improve learning processes, adult education and “helping youth develop educational, career, and leadership potential.”

Kennedy, John F. (1917–1963) Thirty-fifth president of the United States and fourth to be assassinated. The first Roman Catholic ever elected to the White House, he was a champion of equal educational rights and social reform. Born in Boston, he was the son of a wealthy financier and diplomat. He graduated from Harvard University in 1940, served as a U.S. Navy officer during World War II and was a three-term Democratic representative from Massachusetts and two-term senator before ascending to the nation’s highest office in 1961 after campaigning strongly for equal educational rights. “If a Negro baby is born here and a white baby born next door,” he thundered in a New York City speech, “that Negro baby’s chance of finishing high school is about 60 percent of the white baby’s. This baby’s chances of getting through college is about a third of that baby’s. His chance of being unemployed is four times that baby’s.” Once in office, he was forced to assure equal educational rights by sending federal troops to Oxford, Mississippi, to enforce a court order to

admit the first black student to the University of Mississippi. The governor had defied the order and provoked white rioting that led to two deaths.

In 1962, Kennedy ordered members of his administration to study and begin planning for a massive government attack on poverty in the United States. The result was the ECONOMIC OPPORTUNITY ACT of 1964 and the beginning of the most massive federal intervention in public school education in United States history. Unfortunately, an assassin’s bullet prevented Kennedy from seeing its enactment into law. Although his successor, LYNDON B. JOHNSON, was given credit—deservedly—for passage of the Economic Opportunity Act, it was Kennedy’s brother-in-law and close friend and adviser, R. Sargent Shriver, who was appointed director of the act’s most successful program—HEAD START. Head Start eventually helped provide preschool education for millions of deprived American children.

Kent State University A public, coeducational university in Kent, Ohio, and the scene of four student deaths by National Guard rifle bullets in October 1970—a seminal event in turning American public opinion against the Vietnam War. The killings followed four days of student protests against the invasion of Cambodia by U.S. troops on April 30. President Richard M. Nixon had ordered the invasion to chase North Vietnamese troops who were said to have taken sanctuary there. Protests swept the nation’s college campuses. In Kent, some students had run riot through the town on May 1, and a politically oriented rally was staged on campus the next day. Attended by fewer than 1,000 of the university’s 20,000 students, it suddenly turned violent as students burned down the campus ROTC building. Without consulting university authorities, the mayor of Kent asked the governor to send National Guardsmen to Kent State.



The body of a Kent State University student killed by Ohio National Guard bullets at the scene of student protests over United States escalation of hostilities in the Vietnam War. The widely circulated photographs were posted on campus with scrawled demands for vengeance. (*Library of Congress*)

Relatively inexperienced and already exhausted from previous riot duty in Cleveland and Akron, the Guard arrived on campus on May 3, at which time the governor changed their assignment from protecting property to breaking up student assemblies. On May 4, students gathered on the commons. National Guardsmen ordered them to disperse. They not only refused, they also taunted the Guardsmen and started pelting them with rocks. The Guardsmen fired tear-gas canisters, which the students picked up and hurled back at the

troops. Under siege, the troops retreated to high ground, turned and knelt and fired 61 shots into the jeering crowd. Thirteen students fell, four of them mortally wounded. The PRESIDENT'S COMMISSION ON CAMPUS UNREST, which investigated the shootings, condemned the Guardsmen's actions, but a grand jury refused to indict the Guardsmen and blamed the "permissiveness" of university authorities for the incident. Four years later, eight of the guardsmen were indicted for the deaths of the four students, but all were acquitted. In January

1979, however, the state of Ohio paid the victims and their families \$600,000 in compensation as part of an out-of-court settlement.

Kentucky The 15th state admitted to the Union, in 1792. In 1838, Kentucky became one of the first states to establish a public school system. As in other southern states, Kentucky's public schools deteriorated badly during more than a century of racial segregation and school board corruption, which seemed endemic in rural communities. By the time the school reform movement got under way in the 1980s, most of the state's nearly 1,350 public schools ranked in the bottom 10% of American schools in terms of academic quality.

As in all states, Kentucky public schools were financed by local property taxes levied on the basis of property values, with schools in poor areas invariably underfinanced, and, because most districts were in poor, rural areas, the state's adult work force had a high school completion rate of only 53% and was largely semi-literate—hardly an attraction to industry to move into the state. Faced with a bleak economic future, business leaders encouraged 66 school superintendents in districts with low property taxes to file suit against the state, demanding equal resources for all school districts, rich and poor alike.

In its landmark decision, the state supreme court became the first court in the nation to declare a state educational system unconstitutional because it failed to provide the equity, adequacy and uniformity required by the state constitution. In a precursor to similar decisions that followed in many other states, the court said that funding of schools with property taxes raised on the basis of property values was inequitable in that it provided fewer funds to educate children in poor areas than children in well-to-do areas.

In 1990, the state legislature responded to the decision by enacting the Kentucky Educa-

tion Reform Act (KERA) that produced the most comprehensive overhaul of a state school system that the United States has ever seen. Often simply called the Kentucky Plan, KERA went far beyond equalizing the financing of rich and poor districts. Indeed, it produced almost everything critics of American education were calling for: higher academic standards, more money, new curricula, improved technology, more creative teaching and better counseling. Elementary schools were overhauled with a new, ungraded program that allows students to advance at their own pace. The state spent \$136 million on computers and technology, above average for the nation in number of computers per student. A new comprehensive statewide assessment system, the Kentucky Instructional Results Information System, now monitors progress of each district, school and student. KERA also overhauled higher education by almost doubling the number of community colleges, thus expanding postsecondary school learning opportunities for students who either could not or did not want to attend four-year institutions.

In addition to educational reform, KERA also reformed school administration, first disbanding and then rebuilding the state Department of Education and school boards in virtually every district, where, for generations, nepotism and corruption had flourished. Manned largely by political appointees—often without high school diplomas—Kentucky school boards had traditionally been guided by personal, religious and political beliefs. Determined to control all aspects of education, Kentucky school officials had even imposed rules that listed the exact number of minutes teachers were to devote each day to each subject—e.g., 12 minutes for health education. Teachers were expected to interrupt themselves in mid-sentence once their time for each subject expired. Prior to reform, Kentucky's elected school boards had total discretion over supply

and equipment purchases and the right to appoint all school employees, including their own relatives. KERA outlawed nepotism and turned control of local education and school budgets to professional educators and parents by replacing members of each school board with three teachers, two parents and the principal of each school. At the state level, KERA ended gubernatorial cronyism as a basis for selecting the seven members of the college governing board, which has authority over the state's eight four-year and 26 two-year public colleges and universities. (The state also has 28 four-year and 15 two-year private institutions of higher education, many of which are small, church-related schools.) The state has more than 110,000 undergraduates but an extraordinarily high drop-out rate of more than 57%.

The results of KERA reforms on elementary and secondary education, however, were impressive. By 2000, Kentucky had raised its spending on education to levels well above the national average, and, according to the EDUCATION COMMISSION OF THE STATES, almost all Kentucky schools converted their increased funding into dramatic gains in academic achievement. From 1992 to 2000, average student proficiency in reading, writing, mathematics and science proficiency—once among the nation's lowest—rose almost 30%, to about average for the nation. Every public school district in the state established a preschool, and 900 of the state's 1,400 public schools set up after-hours tutoring programs and Family Resource and Youth Service programs. About 12.3% of the state's more than 640,000 students are minority students, and 12.3% live in poverty—just below the national average of 15.1%. Since the academic triumphs of 2000, however, the state legislature saw fit to cut back spending on education, and the results were evident in a commensurate drop in student proficiency. Fourth grade math proficiency fell to 40th in the nation, and eighth grade scores ranked 37th.

Apart from the shifting enthusiasm of lawmakers for funding education, the only other flaw in the state's otherwise improved academic system has been the continuing controversy over teaching the theory of EVOLUTION and CREATION SCIENCE, as fundamentalist Christians and secularists continue a tug-of-war that has produced year-to-year shifts in the contents of the science curriculum. At one point, surging fundamentalist Christian influence forced the state board of education to order public schools to delete the word *evolution* from all textbooks in favor of *change over time*. Although public ridicule forced the board to rescind its order, the emergence of a repackaged form of creationism called INTELLIGENT DESIGN once again placed the teaching of evolution in jeopardy. In December 2005, however, a Federal District Court in Harrisburg, Pennsylvania, ruled that intelligent design was as much a religious viewpoint as creationism and that public schools injecting it into the science curriculum were in violation of the First Amendment of the Constitution.

Kettering Foundation A philanthropic organization established in 1927 by American inventor Charles F. Kettering (1876–1958) to underwrite projects that “advance knowledge and . . . find creative solutions to human problems.” Originally formed for scientific research (Kettering cofounded the Sloan-Kettering Institute for Cancer Research in New York City), today the foundation's projects focus on three areas: government, science and education. In education, it sponsors some studies of American schooling and educational policy, but earmarks most of its funds for its Institute for the Development of Educational Activities, which develops and promotes reforms of elementary school education. Founded in 1965, IDEA helped sponsor the development of Individually Guided Education, which puts together curricula for INDIVIDUALIZED INSTRUCTION based on the individual differences in rates of learn-

ing, learning styles, motivation, achievement and other emotional and psychological factors. IDEA also sponsored the Principals' Inservice Program to foster professional development of school principals.

The Kettering Foundation was also in the forefront of the post-World War II reform movement in public education, having underwritten the formation of the NATIONAL COMMISSION ON THE REFORM OF SECONDARY EDUCATION, which developed some of the first specific proposals—32 in all—for improving education in American public secondary schools. Among the proposals were the formulation of specific, published goals in each secondary school; increased use of instructional television; improving school security and keeping records of violence; and elimination of sexism and racism in schools through improved educational programs. Almost all were subsequently accepted by leading educators as keys to improving secondary school education. After GENERAL MOTORS INSTITUTE became an independent university, it was renamed Kettering University after Charles Kettering. Kettering family members continue serving on the board.

Keyes v. School District No. 1 A landmark 1973 U.S. Supreme Court decision that ordered the Denver, Colorado, school board to desegregate its entire school system "root and branch," using every possible device, including system-wide busing to redistribute Mexican, black and white pupils and effect "the greatest possible degree of actual desegregation." The decision, which held that the Denver school board had intentionally segregated Mexican-American students, was striking in that it was the first ever to deal with segregation in a northern city and the first involving an ethnic group. The decision thus extended the desegregation doctrine beyond race and heralded the Court's intention not to tolerate segregation of any class of Americans.

Kilpatrick, William Heard (1871–1965)

American educator and philosopher whose books prompted the implementation of JOHN DEWEY's progressive pedagogical methods in tens of thousands of schools throughout the world. Born and educated in Georgia, Kilpatrick was a teacher and school principal in his home state and taught college mathematics at his alma mater, Mercer College, before taking a teaching post at Columbia University Teachers College in 1909. There, he met and became a disciple of John Dewey, who, although a prolific writer, expressed his ideas in complex and excruciatingly vague language that allowed for much misunderstanding among those in the practical world of teaching.

A popular teacher and gifted writer, Kilpatrick wrote a number of widely read books that translated Dewey's theories of education into easily understood teaching practices that schoolteachers and administrators could institute immediately. Key to these was the so-called project method, which Kilpatrick refined into a straightforward series of projects, such as building play houses or furniture, cooking a dinner for a "formal" dinner party or making clothes. Although the children considered such projects fun and nothing more than play, teachers used them to teach reading, writing, arithmetic, measuring and other basic academic skills.

Kilpatrick railed at schoolteachers, administrators and educators who variously misread and misunderstood Dewey's theory of PROGRESSIVE EDUCATION as meaning that children should be permitted to play freely in school, free of discipline. Like Dewey, Kilpatrick believed in strict behavioral controls and close teacher supervision of children. Indeed, Kilpatrick was a harsh critic of the MONTESSORI method that left children free and unattended much of the time, to learn or not, by doing whatever interested them on their own. His convincing opposition in his 1914 book, *The Montessori Method Examined*, brought the

Montessori schools movement to a halt in the United States until after World War II.

In addition to his graduate teaching and writing, Kilpatrick was deeply involved in the operations and curriculum development of Horace Mann Lower School, the experimental school of Columbia Teachers College whose curriculum was based in part on Dewey's original UNIVERSITY OF CHICAGO LABORATORY SCHOOL. The Horace Mann Lower School used Kilpatrick's project method as the basis for teaching academic skills from the four-year-old group through sixth grade. Kilpatrick remained at Teachers College until his retirement in 1938—a span of 29 years, during which he also helped found Bennington (Vermont) College (1925), the first college to base its program on progressive education. Kilpatrick was president of its board of trustees from 1931 to 1938. Among his many important books are *Source Book in the Philosophy of Education* (1923), *Foundations of Method* (1925), *Education for a Changing Civilization* (1926), *Education and the Social Crisis* (1932), *Remaking the Curriculum* (1936), *Group Education for a Democracy* (1940) and *Philosophy of Education* (1951).

kindergarten A formally organized pre–first grade class for children usually five years old. Not required in many states, kindergarten was once seen as nothing more than a school-operated playroom that served as a free day-care service. In 1965, when kindergarten was optional in most states, only about 59.5% of American children attended. Twenty years later, when 22 states had made kindergarten mandatory, the percentage of children attending climbed to nearly 82%. Enrollment reached a peak of nearly 90% a decade later, but, for a wide variety of reasons (some known, some not), it has been slipping a bit ever since, to somewhere around 85% today. The surge in HOME SCHOOLING has almost certainly been one factor in siphoning children from public school kindergartens.

Now considered an essential part of formal education, kindergarten originated in Blankenburg, Germany, in 1837, when German pedagogue FRIEDRICH FROEBEL discovered that children seemed to learn more from play than they did from strict, formal, direct instruction and rote memorization. He developed a theory of education that allowed children to grow and learn naturally by playing games, singing, listening to absorbing stories and using selected work materials to engender creativity. The concept spread throughout Europe, but proved of little interest to Americans until ELIZABETH PALMER PEABODY opened a much-publicized private kindergarten for the children of Boston's elite families in 1860. The first public school kindergarten opened in St. Louis in 1873, after Susan E. Blow finished a kindergarten training course with a student of Froebel's widow. Blow was so passionate about the concept that she offered to teach a kindergarten class and instruct a teacher in Froebel's methods free of charge, if the school system provided the teacher-trainee, the room and the equipment. Progressive educator WILLIAM T. HARRIS, the superintendent of schools at the time, agreed. Blow's original kindergarten proved so successful that she eventually spent her full time training kindergarten teachers. By 1900, more than 225,000 American children were attending kindergarten classes across the United States—58% in public schools—where they engaged in set routines of play that included storytelling, reading, singing, playing games and manipulating colored forms and shapes that encouraged creativity while teaching manual coordination and concepts of geometry, color and form.

Kindergarten changed little until the 1920s and 1930s, when the increasing number of women entering the labor market gave rise to a huge new complex of "preschools," which borrowed kindergarten methods and produced a generation of five-year-olds too "sophisticated" for the traditional kindergarten curriculum. For

many years, however, most kindergartens simply added activities such as field trips to enrich the curriculum. As post-World War II studies in child development showed a direct correlation between kindergarten attendance and academic success in primary and secondary school, educators began upgrading the kindergarten curriculum to teach “school-readiness” skills: the alphabet, reading and writing simple words, counting and recognizing numbers, and so on. By 1990, nearly half the kindergartens in the United States were using reading and math workbooks and worksheets. In addition, academic achievement levels expected of finishing kindergartners were as clearly defined as in higher grades in English, mathematics, social studies, science, fine arts and social development.

Of states requiring kindergarten, only nine require full-day attendance, although other states offer it as an option. Indeed, about 57% of all children enrolled in kindergarten attend all-day programs. Designed to help academically disadvantaged students catch up with their more advantaged peers, all-day kindergarten doubles the number of hours that children spend in school but adds only about one-third more instructional time. The remainder of the additional time is devoted to social and recreational activities and the arts. Most children in full-day kindergartens come from minority groups and live in poorer rural and inner-city communities. They score lower on reading and mathematics tests when they enroll, but recent studies indicate that after a year of full-time kindergarten they gain a month academically over students attending half-day kindergarten.

Kitzmiller v. Dover Area School District A case in which 11 parents in the Harrisburg, Pennsylvania, suburb of Dover sued their school board a year after it ordered teachers to read a statement introducing INTELLIGENT DESIGN into the ninth grade science curriculum. On December 20, 2005, Federal District Court judge John

E. Jones III ruled that the teaching of intelligent design as part of the science curriculum violated the First Amendment of the Constitution, which mandates a separation of church and state. Judge Jones declared intelligent design to be as “grounded in religion” as CREATION SCIENCE and as nothing more than “creationism relabeled.” He ruled that “it is unconstitutional to teach I.D. as an alternative to evolution in a public school science classroom.”

“To be sure,” he continued, “Darwin’s theory of EVOLUTION is imperfect. However, the fact that a scientific theory cannot yet render an explanation on every point should not be used as a pretext to thrust an untestable alternative hypothesis grounded in religion into the science classroom or to misrepresent well-established scientific propositions.”

Knapp, Seaman A. (1833–1911) American educator and agriculturist who originated the farm demonstration method that helped teach farmers new agricultural discoveries and techniques. Born in New York City, Knapp graduated from Union College; after teaching in private academies in upstate New York, he acquired a deep interest in farming. He moved to Iowa in 1866, where he became a farmer and editor of the *Western Stock Journal and Farmer* and developed a knowledge of scientific stock breeding. He accepted a professorship at the Iowa Agricultural College at Ames and, later, the presidency and also became first president of the Iowa Stock Breeders’ Association.

Although he sensed the suspicion that ordinary farmers held for academic agriculture—a suspicion he began to share after getting to know his colleagues and students at the college—he nevertheless was a firm believer in scientific agriculture. In 1885 he eagerly accepted an offer to join a large land syndicate that planned to develop a rice industry in southwestern Louisiana. There, he developed a series of demonstration farms, each run by a specially recruited and

trained farm family that could demonstrate and pass along their knowledge of scientific farming to other farmers in everyday language rather than using incomprehensible academic terms. The project proved so successful that in 1898 he was asked to join the Department of Agriculture as "Special Agent to Promote Agriculture in the South," where he used the farm demonstration method to rejuvenate southern agriculture.

In Texas, farmers had exhausted their lands by incessantly planting cotton in unfertilized soil for 30 years, but they had rejected the advice of experts at the agricultural college. Realizing that the principle of neighbors teaching neighbors was a more effective approach, Knapp asked local farmers in Terrell, Texas, to pick one of their members to try some innovations on a 70-acre plot of land. The farmer agreed to plant selected varieties of corn and cotton, adopt new cultivation methods and apply fertilizers in huge quantities. After the farmer reported to his neighbors a tenfold increase in yield and profits on his demonstration plot, other farmers immediately adopted the new techniques. In 1905, Texas A & M President David F. Houston commented, "There are two universities in Texas. One is at Austin and the other is Dr. Seaman Knapp." Knapp's techniques became the basis of the Department of Agriculture's Farmers Cooperative Demonstration Work Program, which carried demonstration farming across the United States and taught American farmers to adopt scientific agricultural techniques.

Knox, Rev. Samuel (1756–1832) Presbyterian minister whose writings on education helped spur early 19th-century efforts to establish a national system of public education. Born in Ireland and educated at the University of Glasgow, he assumed his first pastorate in Bladensburg, Maryland, in 1795, but was immediately caught up in the Revolutionary War on the side of the colonists. After inde-

pendence, he served as principal of various academies in Maryland. He achieved national prominence in 1797 as one of the winners of the prestigious American Philosophical Society essay contest. The contest had asked for an essay describing the "best system of liberal education and literary instruction, adapted to the government, and best calculated to promote the general welfare of the United States. . . ." Like BENJAMIN RUSH before him, and as THOMAS JEFFERSON would do after him, Knox proposed a "uniform system of national education" that would consist of local parish schools, county academies, state colleges and a national university, all headed by a board of national education. County rectors in each state would be responsible for seeing that local schools taught identical curricula, used identical textbooks and imposed identical educational standards throughout the nation. "The uniformity of this plan," Knox wrote, would . . . be productive of not only harmony of sentiments, unity of taste and manners, but also patriotic principles of genuine federalism amongst the scattered and variegated citizens of this extensive Republic."

Similar plans were proposed to both the Constitutional Convention and the national legislature from the time of the drawing of the Constitution until the mid-1820s, when James Monroe became the last president to ask Congress for constitutional authority to "institute . . . seminaries of learning." Prior to Monroe, George Washington had proposed and even planned endowing a national university as a remedy for sectionalism. Benjamin Franklin, Benjamin Rush, John Adams, Thomas Jefferson and JAMES MADISON had all proposed national systems of education along the lines described in Knox's essay. But the effort was blocked by industrialists and planters who depended on children for cheap labor and who feared that universal public education would siphon off their supply of workers and raise labor costs.

In addition to his *Essays on Education*, describing a national system, Knox went on to write such influential pamphlets as *A Vindication of the Religion of Mr. Jefferson and a Statement of His Services in the Cause of Religions Liberty* (1800) and *Essay on the Means of Improving Public Instruction* (1803). The first defended Jefferson's belief in separation of church and state. "It is a happy circumstance peculiarly favorable to an uniform plan of public education," Knox wrote, "that this country hath excluded ecclesiastical from civil policy, and emancipated the human mind from the tyranny of church authority and church establishments." His second pamphlet called for state certification of teachers and the establishment of programs to ensure teacher welfare and security.

Knox College An independent, coeducational liberal arts college of about 1,000 students, founded in Galesburg, Illinois, in 1837. Famed in its early years as a center of abolitionism and one of the first American colleges to admit women and blacks, it was the site of one of the Lincoln-Douglas debates. Knox opened a Female Collegiate Department in 1850 and, 20 years later, admitted women to the full college course. A haven on the "underground railway" for slaves fleeing to Canada before the Civil War, Knox graduated the first black to

serve as a U.S. senator, Hiram Revels (1822–1901), who moved to Natchez, Mississippi, after the Civil War and filled the Senate seat previously held by Jefferson Davis. A minister and educator, Revels later became president of Alcorn University, a school for blacks in Lorman, Mississippi.

Kodaly method A system of music education for young, elementary school-aged children that ignores instrumental and performing skills and focuses on teaching students to understand and appreciate music. Developed by Hungarian composer/teacher Zoltan Kodaly (1882–1967), the method is vocal, calling on children to begin by chanting and singing simple, familiar nursery rhymes, song and folk melodies, and to use hand movements to learn rhythms. The method progresses to the teaching of rhythm, using a simple set of spoken syllables that students use to learn rhythm. The method depends on solfege and the "movable do" (as in "do, re, mi"), which makes "do" the tonic home note of every melody, regardless of its actual key.

Kuder-Richardson formulas A series of formulas, developed in 1937, to measure the reliability and consistency of teacher-made tests that cannot be subjected to large-population studies over long periods.

L

labials Those sounds produced exclusively by the lips: B, M and P. The sounds pronounced with the lips and the teeth, F and V, are designated labiodentals.

laboratory instruction An experiential method of teaching, usually in specially designed and equipped areas or classrooms, where students can work individually or in small groups to demonstrate concepts studied in lectures or textbooks. Laboratory instruction is usually a required element of high school sciences, foreign language and vocational and technical courses and an equally important part of college and graduate school courses in science, engineering, foreign languages and the social sciences.

laboratory school An elementary or secondary school, usually on a college or university campus, with a faculty made up of student-teachers and MASTER TEACHERS from the affiliated or nearby teachers college. Although ultimately designed to teach students, laboratory schools also serve as a training ground for student-teachers and an experimental laboratory where investigators can study children and the learning process and where they can develop and demonstrate new teaching techniques and approaches to learning.

Although many schools throughout the history of the United States have served as “lab-

oratories” for demonstrating new educational theories, the modern laboratory school is indeed a laboratory, staffed by trained educational “scientists.” Educator/philosopher JOHN DEWEY founded the first pure laboratory school, in 1896, at the University of Chicago, where he translated his theory that children learn effectively from play into practical pedagogical techniques. Instead of using traditional rote learning methods, children learned reading, writing, calculating, measuring and other skills by participating in teacher-directed “play” projects,—e.g., playing house, building a house, planting a farm—that required them to develop academic skills needed for cooking, sewing, cutting wood, etc. Students at the Dewey School generally emerged two full grades ahead of students from traditional schools.

The startling results at the Dewey School led to the creation of laboratory schools at teachers colleges across America—nearly 200 when they reached their peak shortly after World War II. Their number declined as researchers began to question the validity of many results that laboratory schools produced with their students. Almost all private, the laboratory schools inevitably drew large numbers of culturally advantaged, success-oriented children of faculty families and families of wealth. Also contributing to the decline of laboratory schools was the incorporation of many of their methods into private school education. In

addition, the educational reform movement of the 1980s also hurt laboratory schools, as educators and school administrators turned many public schools into giant laboratories to develop effective new teaching methods applicable to the general population.

(See also EDUCATION REFORM.)

labor education A relatively strong movement by organized labor in the early 20th century to instruct workers in the techniques of organizing, grievance procedures, collective bargaining, negotiating and administering labor agreements, and strikes. Initially haphazard, labor education as a movement gained momentum following World War I, in response to the growth of corporation schools and colleges. The latter were attempting to indoctrinate employees in the so-called American Plan, which denigrated unionism and praised the benefits of the open shop. Union leaders responded by provoking 3,600 strikes in 1919 alone. In the course of the strikes, they distributed leaflets, pamphlets, books and periodicals and organized lectures, lyceums, study circles, discussion groups and formal classes to teach workers what they alleged were the evils of capitalism and the benefits of nationalization in labor-intensive industries, such as railways and coal mining.

Earlier, in 1906, the Socialist Party, then threatening to become a major "third party" in American politics, had organized the Rand School of Social Science in New York to teach socialist theory. But labor education as a movement did not grow until the unions themselves organized formal programs. In 1916, the International Ladies' Garment Workers' Union (ILGWU) established its own education department to train workers in organizational and striking techniques. Three years later, the Amalgamated Clothing Workers of America set up a similar unit. In 1921, a group of socialist leaders carried the movement a step further by organizing the Brookwood Labor College, a

formal college in Katonah, New York, where would-be and rising union organizers studied academic courses in social history and philosophy as well as practical techniques of organizing union chapters, analyzing strike situations and negotiating settlements. Based on the famed Workingmen's College in London, England, Brookwood also offered related educational and recreational opportunities such as the writing and performing of labor dramas.

The year 1921 also saw the opening of another kind of labor college, with a totally different mission. The Bryn Mawr Workers' Summer School was not organized to educate working women in unionization techniques, but to compensate for their lack of formal education and train them for life outside the workplace. Bryn Mawr offered courses for working women in literature, history, hygiene, science and modern industrial society. The economic depression and massive unemployment forced both colleges out of business—Brookwood in 1937 and Bryn Mawr a year later. Other labor education efforts included the organization of the Workers' Education Bureau of America in 1921, as a national clearinghouse for labor education, and the establishment of the AFL-CIO National Labor Studies Center (later the George Meany Center for Labor Studies) in 1970, in Silver Spring, Maryland, as an institute for training potential labor union leaders.

Lancasterian system An approach to mass education whereby a teacher assigns the oldest, brightest students to teach groups of younger children. Developed in England in 1798 by Quaker educator Joseph Lancaster, the idea originated in Madras, India, where Andrew Bell ran a school for orphans, with only enough funds to hire one teacher. Bell devised a monitorial system, using older pupils to instruct younger ones, which he described in a pamphlet, *Experiment in Education*. Lancaster refined the system in a monitorial school he estab-

lished in 1801 that soon accommodated 1,000 students, with Lancaster training and teaching older, brighter students who, in turn, taught what they knew to groups of younger students. With one teacher training and teaching six older students in the morning, and each of the students then teaching 10 younger students in the afternoon, one teacher, in effect, "taught" 600 students. His pamphlet about the system, *Improvements in Education*, gained him royal support in 1805, and in 1808 a Royal Lancastrian Society was formed that helped spread the system over the next three years to about 100 schools, with a total of 30,000 pupils, throughout England.

In 1818, Lancaster immigrated to the United States, where his system was adopted in schools in Boston, Philadelphia, Baltimore and Washington, D.C. The method proved so cost-effective that the Free School Society, a Quaker organization that educated poor children free of charge, used the Lancasterian system in about 60 schools, at a cost of about \$1.22 per child per year. Each school was divided into classes of 10, with one monitor teaching each class. As the Lancasterian method began taking hold in other cities, educational reformers such as Horace Mann unleashed a barrage of criticism of the method for the cruel bullying that monitors often inflicted on younger children and the universally inadequate and low-quality instruction proffered by inexperienced child-tutors. Although the system was eventually abandoned in elementary and secondary schools, it took hold in many colleges and universities during the last decades of the 20th century and is a standard method of instruction for undergraduates in even the most academically selective institutions, where graduate students can obtain scholarships by serving as TEACHING ASSISTANT. Earning an average of about \$3,000 per course, T.A.s reduce the need for, and the costs of, high-paid, full-time faculty, and they free tenured faculty for research and

other non-teaching pursuits. Teaching assistants and ADJUNCT instructors at some colleges handle as much as 70% of undergraduate classroom instruction. Yale University tripled the number of T.A.s in the 1980s and 1990s to about 1,100, while permitting the number of professors to decline by about 5%.

land-grant colleges State-run, public institutions of higher education established and originally financed under provisions of the two Morrill, or Land Grant, Acts passed by Congress in 1862 and 1890. Introduced by Rep. Justin Smith Morrill of Vermont and signed into law by Abraham Lincoln, the Morrill Act of 1862 represented the first federal intervention in public education in United States history. At the time, it represented the crowning achievement of the public school movement, which was attempting to democratize education in the United States. The Morrill Act of 1862 granted each state 30,000 acres of federal land for each congressman from that state, with income from such lands to be used for "the endowment, support, and maintenance of at least one college . . . to promote the liberal and practical education of the industrial classes in the several pursuits and professions in life." The law specified that the "leading object" of the colleges would be the teaching "of such branches of learning as are related to agriculture, mechanics . . . and military tactics," although not to the exclusion of "other scientific and classical studies."

The law marked a turning point in American educational philosophy by democratizing higher education, which was now open to all qualified applicants, regardless of their economic or social station. Until then, colleges had largely been private institutions reserved for the intellectual and social elite to train for leadership positions in American government, business, the clergy and the professions. With the Industrial Revolution under way and a

rapidly expanding nation in desperate need of better educated frontiersmen to open and build the West, Congress created a new type of college where ordinary citizens could learn farming and engineering at public expense, while training as militiamen to defend themselves, their families and neighbors and properties against Indian, Mexican or other enemy attacks on the frontier. The result was a huge new network of free, state-run agricultural and engineering colleges, which eventually grew into such public institutions as the state universities of California, Illinois, Maine, Minnesota, Nebraska, Ohio, Pennsylvania, West Virginia, Wisconsin and Wyoming, Purdue University in Indiana and a number of black colleges in the South.

The states were free to do what they wanted with the federal lands they received, so long as revenue from the lands was used to support the new colleges. Some states sold the lands, invested the proceeds and used the returns to build and operate their schools. New York State decided against operating the land-grant college itself and turned the job over to the privately run Cornell University, which still operates the state-supported College of Agriculture and Life Sciences, the College of Human Ecology, and the School of Industrial and Life Sciences. In other words, not every state university—such as the State University of New York—is necessarily a land-grant college, although every land-grant college continues to be state-supported, whether or not it bears the state's name.

To speed development of the new colleges, a second Morrill Act in 1890 provided for an annual federal appropriation for each college, starting with an initial appropriation of \$15,000 and an increase of \$1,000 each year thereafter for 10 years. In states with racially segregated colleges, the subsidies were split between white and black land-grant colleges. The 67 land-grant colleges and universities listed below

have between 2.5 million and 3 million students. The federal government provides only about 10% of their revenues, with the rest coming from state and local government, from endowment income, from private and public gifts and grants, and from student payments for tuition, room and board and other fees.

Those marked with asterisks were founded as all-black colleges in states where the races were segregated by law. Although all land-grant colleges are now desegregated, African Americans continue to constitute the majority of the student body at formerly all-black colleges. The institutions are listed by their original names, alphabetically by state and in alphabetical order within each state. Some institutions predate the Morrill Acts, but assumed land-grant status in their states when the acts were passed.

Land-Grant Colleges and Universities

- Alabama Agricultural and Mechanical University, Normal, Alabama (1875)
- Auburn University, Auburn, Alabama (1856)
- University of Alaska, Fairbanks, Alaska (1917)
- University of Arizona, Tucson, Arizona (1885)
- University of Arkansas, Fayetteville, Arkansas (1871)
- *University of Arkansas, Pine Bluff, Arkansas (1873)
- University of California, Berkeley, California (1868)
- University of Connecticut, Storrs, Connecticut (1881)
- *Delaware State College, Dover, Delaware (1891)
- University of Delaware, Newark, Delaware (1743)
- *Florida Agricultural and Mechanical University, Tallahassee, Florida (1887)
- University of Florida, Gainesville, Florida (1853)
- *Fort Valley State College, Fort Valley, Georgia (1895)
- University of Georgia, Athens, Georgia (1785)
- University of Guam, Mangilao, Guam (1952)
- University of Hawaii, Honolulu, Hawaii (1907)
- University of Idaho, Moscow, Idaho (1889)

- University of Illinois, Urbana, Illinois (1867)
Purdue University, West Lafayette, Indiana (1869)
Iowa State University, Ames, Iowa (1858)
Kansas State University, Manhattan, Kansas (1863)
Kentucky State University, Frankfort, Kentucky (1886)
University of Kentucky, Lexington, Kentucky (1865)
Louisiana State University and Agricultural and Mechanical College, Baton Rouge, Louisiana (1860)
*Southern University and A & M College, New Orleans, Louisiana (1880)
University of Maine, Orono, Maine (1865)
University of Maryland, College Park, Maryland (1856)
University of Massachusetts, Amherst, Massachusetts (1870)
Michigan State University, East Lansing, Michigan (1855)
University of Minnesota, Twin Cities, Minnesota (1851)
*Alcorn State University, Lorman, Mississippi (1871)
Mississippi State University, Mississippi State, Mississippi (1880)
Lincoln University, Jefferson City, Missouri (1866)
University of Missouri, Columbia, Missouri (1839)
Montana State College, Bozeman, Montana (1893)
University of Nebraska, Lincoln, Nebraska (1869)
University of Nevada, Reno, Nevada (1874)
University of New Hampshire, Durham, New Hampshire (1866)
Rutgers, the State University, New Brunswick, New Jersey (1771)
New Mexico State University, Las Cruces, New Mexico (1888)
Cornell University, Ithaca, New York (1868)
*North Carolina Agricultural and Technical State University, Greensboro, North Carolina (1891)
North Carolina State University, Raleigh, North Carolina (1889)
North Dakota State University of Agriculture and Applied Science, Fargo, North Dakota (1891)
Ohio State University, Columbus, Ohio (1870)
*Langston University, Langston, Oklahoma (1897)
Oklahoma State University, Stillwater, Oklahoma (1890)
Oregon State University, Corvallis, Oregon (1868)
Pennsylvania State University, University Park, Pennsylvania (1855)
University of Puerto Rico, San Juan, Puerto Rico (1903)
University of Rhode Island, Kingston, Rhode Island (1892)
Clemson University, Clemson, South Carolina (1889)
South Carolina State University, Orangeburg, South Carolina (1895)
South Dakota State University, Brookings, South Dakota (1881)
*Tennessee State University, Nashville, Tennessee (1912)
University of Tennessee, Knoxville, Tennessee (1794)
Texas A & M University, College Station, Texas (1876)
*Prairie View A & M University, Prairie View, Texas (1878)
Utah State University, Cedar City, Utah (1897)
University of Vermont, Burlington, Vermont (1791)
University of the Virgin Islands, St. Thomas, U.S. Virgin Islands (1962)
*Virginia State University, Petersburg, Virginia (1882)
Virginia Polytechnic Institute and State University, Blacksburg, Virginia (1872)
Washington State University, Pullman, Washington (1890)
West Virginia University, Morgantown, West Virginia (1867)
University of Wisconsin, Madison, Wisconsin (1849)
University of Wyoming, Laramie, Wyoming (1886)

land ordinances (1784, 1785, 1787)

Three far-reaching ordinances by which Congress specified how government and, in consequence, formal education would be established in new territories acquired by the federal government. Drafted by Thomas Jefferson, the ordinance of 1784 provided for western lands to be divided into states and that the settlers therein be empowered to establish temporary governments based on the constitutions and laws of any of the original 13 states. When the population of any new state reached that of the smallest of the original states, the new state could be admitted to the Union on an equal basis.

An ordinance of 1785 went a step further, mandating the division of western lands into towns six-miles-square and division of the towns into lots one-mile-square, with one lot in each town reserved for public schools, and the rest sold at public auction for not less than one dollar per acre. The ordinance of 1787, better known as the Northwest Ordinance, revoked the ordinance of 1784 and made Congress, instead of the settlers, responsible for establishing temporary governments in the Northwest Territory. It also specifically prohibited slavery and extended the right of free worship, legislative representation, habeas corpus, trial by jury and inviolability of contracts to territory inhabitants. Finally, it stated, "Religion, morality, and knowledge, being necessary to good government and the happiness of mankind, schools and the means of education shall forever be encouraged."

Langdell, Christopher Columbus (1826–1906) American lawyer, educator and "father" of modern law school education in the United States. Just as WILLIAM HENRY WELCH revolutionized medical school education, Langdell transformed preparation for the law from a haphazard apprenticeship system into the formal, three-year curriculum that it is

today. A graduate of Harvard Law School, Langdell was toiling in obscurity in a New York City law firm in 1869 when his former Harvard classmate and friend, chemistry professor Charles Eliot, was named president of Harvard. Eliot's goal was to transform what was then a small, archaic institution into one of the world's great universities and a model for all American universities. He invited Langdell to become professor of law in 1870 and, a year later, appointed him dean of the law school, with a mandate to transform the school into the premier institution of its kind.

At the time, most lawyers trained by serving apprenticeships in law offices. They studied textbooks in their spare time and occasionally attended formal lectures, purchased on a course-by-course basis at law schools such as Harvard. Harvard granted a bachelor of laws degree to any student who eventually completed its 18-month course of study. No examinations were required, nor was graduation required for eventual professional certification. Langdell transformed law school education by inventing the "case-book method," which remains the core of modern law school education. He theorized that lawyers would be better trained if they were presented with actual cases and forced to study and reason through each case. He believed such education would be more effective in the confines of a university than in a law office, where running errands often took precedence over giving law students an understanding of complex legal concepts.

During his first year at Harvard, Langdell the law professor abandoned the traditional lecture in favor of seminars, in which students studied and discussed appellate court cases and opinions and then developed their own analyses and opinions. As dean the following year, he introduced his method in all other courses, in effect transforming law into a science and the casebook into the equivalent of a laboratory. He divided the curriculum into 13 core

subjects, each of which students studied and learned using the casebook method. First-year students studied property, common law pleading, contracts, torts and criminal law. Second-year students studied equity, evidence, corporations, sales, agency, persons, bills and notes and constitutional law. Langdell published three casebooks himself for use at the school: *A Selection of Cases on the Law of Contracts* (1871), *A Selection of Cases on Sales of Personal Property* (1872), and *Cases of Equity Pleading* (1875). He also published *A Summary of Equity Pleading* (1875), *A Summary of the Law of Contracts* (1879) and *A Brief Survey of Equity: Jurisdiction* (1905).

As the law school's reputation grew, so did enrollment. With more applicants than he could accept, Langdell introduced strict academic requirements for admission, expanded the curriculum, extended the course to three years, increased the size of the faculty, improved library resources and, for the first time in the history of legal education, introduced examinations as a requirement for graduation and receipt of a degree. By 1890, Harvard Law School had become the premier law school of the United States, with the skills and knowledge of Harvard lawyers so dominating their profession that other law schools were forced to adopt the Harvard model of legal education. Langdell remained at Harvard Law School as dean until 1895 and as a professor of law until 1900.

language arts A broad, curricular designation for the components of, and skills required for, language development, including reading, writing, speaking, listening, thinking and spelling.

language disorders Any of a wide variety of impairments in individual communication skills, including impaired reception, speech disorders or neurological dysfunctions that

affect the ability to acquire, use and comprehend the spoken and written language. Usually remediable with SPECIAL EDUCATION, language disorders stem from a large number of different causes, many of them unknown. The most common known causes include neurological damage or impairment, mental retardation, emotional disturbances, developmental deficiencies, physical injuries and sociocultural differences. Indeed, the causes of some language disorders are simply unknown.

language experience approach An instructional approach that uses the oral recounting, writing and subsequent discussion of student experiences as a method of encouraging language development skills. Used as a supplement rather than a substitute for conventional language development techniques with printed story materials, the language experience approach calls on individuals or groups of students to record the details of a class experience such as a field trip or holiday celebration on a large (experience) chart, from which students can read and discuss the event recorded and eventually write individualized essays. The experience approach adds the enthusiasm of a shared experience to the learning of a broad array of language development skills, including translation of visual observations into language, speaking, writing, reading and listening. The approach also teaches youngsters individual differences in the ways people see, understand and describe the same event.

language laboratory A specially equipped school or library room for teaching foreign languages. Often designed with a teacher's console at one end, the laboratories are made up of rows of contiguous study CARRELS, each equipped with any of a wide variety of audiovisual equipment to facilitate teaching and learning. Students at each carrel use headsets and keyboards or a computer "mouse" to listen and/or watch

recorded lessons, to which they are expected to respond and then hear and compare their responses with correct versions. From the console, teachers can monitor and, when necessary, intervene in each student's lesson.

Lanham Community Facilities Act A World War II preparation measure passed by Congress in the spring of 1941 to provide federally sponsored day-care centers for preschool children of mothers working in defense industries. Federal day care was not new. In 1933, during the economic depression, the Federal Emergency Relief Administration had earmarked funds to operate nursery schools for children of needy, unemployed parents. Designed as much to provide jobs for unemployed teachers as it was to feed hungry children, the earlier program became the responsibility of the Division of Education Projects in the Works Progress Administration, which was established in 1935 to help get the nation's unemployed back to work. By 1937, WPA was operating nearly 1,500 nursery schools across the United States, with a total enrollment of nearly 40,000 children—the first “public” nursery schools in the history of American education. Many operated as part of local public school systems, others were set up as laboratory schools in teachers colleges and universities and still others operated as part of local community agencies.

When government concerns shifted from unemployment to war preparedness in 1940 and war mobilization in 1941, most WPA programs came to an end and were replaced with defense-related activities. The Lanham Community Facilities Act extended federal support for nursery schools because of the need for day-care facilities for children of mothers flocking to work in defense-related industries to replace male workers who had been drafted into the military. By the end of World War II, the federal government had spent \$45.8 mil-

lion on some 2,800 child care facilities for a total of 1.5 million children.

The government withdrew from preschool education after the war, however, and most of the 2,800 public nursery schools and day-care centers closed after a virtually all-male Congress ended the flow of Lanham Act funds in 1946, in the expectation that women would cede their wartime jobs to men and return home with their preschoolers. That did not happen. Indeed, from 1948 to 1966, the percentage of married women in the workforce with children under six and husbands living at home increased from 10.8% to 24.2%. Day-care facilities reopened across the nation, but almost all under private sponsorship.

lantern slides The oldest artificial audiovisual devices in American education, dating back to the early 19th century, when candlelight was used to project and enlarge images from glass squares onto a classroom wall. First used in the United States in an 1823 astronomy class by education pioneer CATHERINE BEECHER at her Hartford Female Seminary, the lantern slides were placed on a newly invented projector called the Improved Magic Lantern, which eventually became standard equipment in American schools of the 19th century. Standardized at 3 1/2 inches by 4 inches during the last century, lantern slides grew in popularity with the invention of photography and the development of positive photographic images for projection onto screens.

Lathrop, Julia Clifford (1858–1932) American social reformer, champion of child labor laws and first chief of the U.S. Department of Labor Children's Bureau when it opened in 1912. A graduate of Vassar College, Lathrop worked with Illinois charitable institutions and was instrumental in separating the young from the old in such institutions. She also helped sponsor legislation that established the nation's



Widely circulated photographs of children, some as young as five years old, working long hours in cotton mills, helped Julia Lathrop succeed in winning passage of a child labor law in 1916. The United States Supreme Court later declared the law an unconstitutional infringement of children's right to work. (*Library of Congress*)

first JUVENILE COURT in Chicago, in 1899. Once in office, Lathrop was aggressive in using the Children's Bureau's few powers to investigate, report and disseminate information and data relating to the welfare of children and child life in the United States in the belief that the availability of facts would encourage reform. She put together the first national reports on infant mortality rates, birth rates, illegitimacy, maternal deaths, orphanages, juvenile courts, juvenile delinquency, parental desertion of children, child employment, dangerous occupations of children and children's accidents and diseases. A fighter for child labor laws, her constant cry

for "child training in place of child labor" helped reshape the American perception of adolescents from young men and women ready for work, to dependent children in need of instruction, formation and care. The concrete result of her efforts was the passage, in 1916, of a child labor law that a conservative U.S. Supreme Court would declare unconstitutional two years later because it interfered with children's "right" to work.

While bureau chief, Lathrop was also instrumental in teaching millions of American mothers about infant and child care by commissioning and distributing three widely read

pamphlets “addressed to the average mother of this country”: *Prenatal Care* (1914), *Infant Care* (1915) and *Child Care: The Preschool Age* (1918).

Latin The language of ancient Rome and its vast territories and, until the mid-19th century, the language of classical scholarship, required in every school and college as a core subject. Now considered a “dead” language, Latin evolved considerably throughout the centuries, from ancient to medieval to “New,” or Modern, Latin. The latter developed in the 15th and 16th centuries; as the official language of the Roman Catholic Church, it was the language spoken in English and European schools and universities where students prepared for the clergy. The introduction of secular studies into the university curriculum brought no change in the use of Latin as the primary language on campus, and it remained a required course in all LATIN GRAMMAR SCHOOLS in the American colonies, where boys spent seven years learning to read, write and speak fluent Latin.

The early years focused on Latin grammar, Latin conversation and composition and the study of such works as Cato’s *Distichs*, Aesop’s *Fables*, Erasmus’s *Colloquies*, the comedies of Terence, Ovid’s *Epistles* and *Metamorphoses*, and Scripture. Upper-graders studied Horace, Virgil, Juvenal, Caesar and Cicero and perfected their skills to the point of fluency. Monday through Thursday mornings were usually devoted to study of grammar, afternoons to literature; Fridays to review and testing of memorization; Saturdays to themes; and Sundays to catechizing and other religious exercises. College studies, lasting three years, assumed fluency and were designed to teach students to speak “a pure and elegant Latin” by reading and discussing the works of Juvenal, Cicero, Livy, Horace and Quintilian.

Even with the secularization of the secondary school and college curriculum in the late

19th century, fluency in Latin remained a core curricular requirement because almost all books of scientific, philosophical and religious importance were still written in Latin. Indeed, as late as 1950, two years’ study of Latin remained a requirement for admission to U.S. medical schools and to the undergraduate programs of selective, classical universities such as Yale, Harvard and Princeton. With the adoption of English as the international language of science, commerce and diplomacy after World War II, Latin gradually disappeared as a requirement from the curricula of American schools and colleges, and it is now a seldom studied elective that is rarely available in most secondary schools.

Latin grammar school A private secondary school developed in England that originally took boys of nine or ten years of age for four to seven years of preparation for college. The first school founded in the American colonies was the Boston Latin School, which opened on April 13, 1635. Latin grammar schools, or, more simply, grammar schools, accepted only boys who could read and knew English grammar and basic mathematics and whose parents could afford the tuition. The Latin school curriculum focused on Latin grammar, but also included study of Greek and some history, geography, geometry, algebra and trigonometry. The Latin school eventually proved too costly and impractical for life in an expanding frontier nation, and it was replaced by the academy, which offered a broader curriculum. Boston Latin, however, remained one of New England’s most renowned schools, eventually helping to educate some of the foremost American colonialists, including BENJAMIN FRANKLIN. Boston Latin is now a public school with a conventional public school curriculum.

Laubach Literacy Program An instructional method of teaching adult illiterates to

read using individual tutors and an elaborate system of pictures. Originally developed in 1943 by a missionary seeking to teach and convert Filipino Moros, the program is designed to bring adolescents and adults up to the equivalent of sixth grade literacy.

Lau v. Nichols A far-reaching 1974 U.S. Supreme Court decision that extended the obligation of American public schools to educate all children residing in the United States—in their native languages, if necessary. The Court ruled that the San Francisco public school system had “effectively foreclosed from any meaningful education” non-English-speaking Chinese students by failing to provide them with instruction in Chinese. The Court ordered the schools to “rectify the language deficiency” by establishing special-language programs for non-English-speaking children. The decision created an educational crisis in many school districts by effectively forcing public schools to provide “a full and appropriate program of education” to all children in their jurisdiction, regardless of whether the children could speak English or not. The decision resulted in passage by Congress of the 1974 Bilingual Education Act, which guaranteed educational equity for children with limited English-speaking abilities by providing federal funds to local school districts for bilingual education and special instruction.

law-related education A relatively new area of instruction that groups together elements of civics, history, social studies and citizenship education in a curriculum designed to provide nonprofessional students with knowledge and understanding of laws and the American legal system. Designed for all levels of students, from elementary school through college, law-related education curricula were first devised in the mid-1970s by a U.S. Office of Education study group that found a need for

such education to help students “be more informed and effective citizens.” The core elements of law-related education were to include a study of the Bill of Rights and the Constitution, constitutional law, fundamental legal principles, the judicial system, and the law as an instrument of democracy and an instrument in avoiding and settling conflicts. In 1978, Congress agreed with the study group’s findings and passed the Law-Related Education Act to provide grants for the encouragement of such education through school and college educational programs, adult education, teacher training programs and youth internships in various law activities outside school.

Law School Admission Test (LSAT) An examination required for admission to the more than 190 law schools accredited by the American Bar Association. Administered by the Law School Admission Council, the LSAT is divided into a 35-minute essay-writing section and four 35-minute, multiple-choice sections that measure reading comprehension, analytical reasoning skills and two types of logical reasoning. LSAT results are only one of many factors considered in the law-school admissions process.

law schools Graduate schools that train students to become professional lawyers and/or jurists. For early 17th-century settlers in the American colonies, the only formal training for law was in England, at the Inns of Court. However, there were far less costly, less time-consuming alternatives. Because no professional certification was required to practice law in the colonies, one could simply read law on one’s own and go into practice. In fact, lawyers did little more than draw up contracts, leaving the settling of most legal disputes to local ministers or sheriffs. The most common form of training was similar to that in other professions and crafts—apprenticeships. Students trained

as jurists by serving as clerks in court, while aspiring lawyers learned their trade through a combination of self-study, copying legal documents, informal association with and formal instruction by “master” lawyers, and, eventually, limited practice under supervision.

The quality of such apprenticeships depended, as in any craft, on the caliber of the “master” craftsmen. Those with the best reputations as teachers and lawyers quickly drew more apprentices than they could handle. Tapping Reeve (1744–1823), in the then-important town of Litchfield, Connecticut, was one of these. To avoid repeating himself and to improve his teaching efficiency, he devised and opened the nation’s first “law school” in 1774. The Litchfield Law School was a simple freestanding structure in Reeve’s backyard devoted entirely to instruction and study, and it quickly became the nation’s preeminent institution of its kind. Reeve eventually worked out a curriculum consisting of a carefully planned series of lectures on 139 different areas of the law. When Reeve was appointed to the Superior Court in 1798, he called on a former student to help him run the school until 1820, when two more former students joined the “faculty.” It remained the nation’s premier law school until its closure in 1833, when it could no longer compete with the expanded law departments at Harvard, Yale and Columbia colleges.

The first formal college law courses were introduced about five years after Reeve had opened the Litchfield Law School. The College of William and Mary offered a course on law and police practice in 1779, the University of Pennsylvania in 1789, and Columbia College in 1794. Such courses were offered, however, simply as part of the undergraduate curriculum and usually consisted of little more than a series of lectures, requiring the reading of a textbook or two on the broad principles and theories of English common law. Litchfield

Law School was a true law school in that it prepared its students for practice.

After independence, however, the drafting of the Constitution and the enactment of an increasing number of federal and state laws produced an increasing number of law courses to study and with them, law departments and small law schools. By 1831, there were seven; by 1870, there were three dozen. Most, however, offered courses that were nothing more than a series of formal lectures, purchased on a course-by-course basis. There were neither qualifications to enroll nor examinations during the school year. Harvard’s law school, for example, granted a bachelor of laws degree to any student who simply completed its 18-month course of study. Nor was graduation required for certification to practice law. Indeed, most lawyers continued to train for their professions by serving apprenticeships in law offices, while studying textbooks in their spare time and only occasionally attending formal lectures such as those at Harvard.

It was CHRISTOPHER COLUMBUS LANGDELL who in 1870 transformed law school education by inventing the case-book method that remains the core of modern law school education. He theorized that lawyers would be better trained if they were presented with actual cases and forced to study and reason through each case. He believed such study would be more effective within the confines of a university, where students could concentrate on law and dispense with running errands and other apprenticeship chores in law offices. Appointed professor of law at Harvard in 1870, he replaced lectures with a system whereby his students studied and discussed appellate court cases and opinions in class while developing their own analyses and opinions using theoretical texts as a reference rather than the sole source of their legal knowledge. Named dean of the law school the following year, Langdell introduced his method in other law courses and, in effect,

transformed law into a science and the case-book into the equivalent of a laboratory.

He divided the curriculum into 13 core subjects: First-year students studied property, common law pleading, contracts, torts and criminal law; second-year students covered equity, evidence, corporations, sales, agency, persons, bills and notes, and constitutional law. Langdell introduced strict academic requirements for admission, expanded the curriculum, extended the course from 18 months to three years, increased the size of the faculty, improved library resources and, for the first time in the history of U.S. legal education, introduced examinations as a requirement for graduation and receipt of a degree. By 1890, Harvard Law School had become the premier law school of the United States, with the skills and knowledge of Harvard lawyers so dominating their profession that other law schools were forced to adopt the Harvard model of legal education. The United States has more than 230 accredited law schools.

leadership The ability to direct and influence the intellectual, emotional and physical behavior of others. Essential for successful teaching and school administration, educational leadership usually depends on individual skills in two broad areas: professional and social. In the professional area, teachers must be able to demonstrate a thorough knowledge of and competence in their subject and in appropriate teaching methods, while administrators must be able to demonstrate a knowledge of and competence in administration and business management. At the social level, leadership calls for the ability to form warm, interpersonal relationships and to motivate individuals and groups to support, contribute to and complete class and school projects. Beyond these professional and social skills, teachers and administrators must be able to assume and assert authority on an appropriately formal or informal basis, as situations

demand. Assertion of formal authority involves issuance of nondebatable calls for action by subordinates or students in ways that do not provoke opposition. Assertion of informal authority involves motivating subordinates or students to suggest and adopt a course of action that fulfills the teacher's or administrator's goals.

There are a wide variety of theoretical models of leader behavior for various types of organizational structures, ranging from the military to partnership organizations. Public sector educational organizations represent a particularly difficult environment for demonstration and development of leadership because of the varying degrees and types of authority impinging upon the school population—parents, teachers, school staffers and administrators, elected and appointed local school board authorities, local voters, elected and appointed regional and state education officials, federal official—each with a somewhat different agenda that undermines the leadership ability of members in every other group. Far more conducive to leadership development is the private school, where a board of trustees grants full administrative authority to a single principal, who, in turn, can delegate full educational authority to teachers in their appropriate academic sectors. Studies by the U.S. Department of Education indicate that average student academic achievement correlates directly with degree of teacher authority over classroom behavior and curriculum content.

learning In education, the acquisition of knowledge; also used in a broader, psychosociological and neurological sense to indicate any permanent change in behavior or attitude. Learning in the educational or classroom sense is a complex process that some educators divide into eight phases: motivation, presentation, acquisition, retention, recall, generalization, performance and feedback.

The motivation stage helps the student understand the rewards of the learning that is about to take place. In the presentation phase, the teacher gains the student's attention with an appropriately stimulating problem, which the teacher explains until the student understands it, along with the materials needed for its solution, and the solution itself. The third, or acquisition, phase sees the learning take place as the student absorbs the new knowledge and stores it in short-term memory. In the retention phase that follows, the student encodes the solution, often using teacher-suggested mnemonic devices or other "memory tricks" that store the knowledge in long-term memory. The fifth, or recall, phase sees the student repeatedly retrieve the information. In the generalization stage, recall is followed by "transfer," or application of new knowledge to new and different situations. The performance stage sees the student use the new knowledge, independently in applications not suggested extrinsically by the teacher. The performance stage is important for the teacher's assurance that learning has indeed taken place. In the final feedback stage, the teacher gives the student appropriate grades or comments to describe the degree of learning success.

In the actual classroom situation, the eight learning phases are often combined into four-step lesson plans consisting of an introduction, presentation, application and conclusion. In the introduction, the teacher describes the lesson and lesson object and appeals to student motives and interest in pointing out the benefits of learning the new material. Teachers often use provocative demonstrations in their introduction. The presentation stage of the lesson plan sees the new material introduced and explained with summaries, recapitulations, oral questioning, discussion and illustrations. In the application stage of the lesson plan, the teacher encourages students to demonstrate what they have learned, while the conclusion

of the lesson must provide students with encouraging feedback.

learning blocks Any intrinsic, usually inexplicable, albeit remediable, interference in the learning process. Vaguely defined and therefore little studied in and of themselves, learning blocks may be physical or psychological in origin, with the former traceable to a wide variety of factors ranging from fatigue, temporary illness or temporary or permanent neurological injuries. Psychological learning blocks may relate to a broad range of emotional factors such as anxieties, fear, disinterest or conflicts. More often they are inexplicable and quite puzzling to both student and teacher. Usually beyond the student's control or understanding, learning blocks are often inconsistent with the student's usual learning skills—the inability of a good speller, for example, to learn to spell one particular word.

Teacher assistance in developing specific coding mechanisms such as mnemonic devices, word pictures or other "memory tricks" is the usual method of helping students overcome the most common learning blocks—for example, teaching a generally good speller who consistently fails to spell "separate" correctly to remember that there is "a rat" in "separate." Although some of the literature lists educational factors such as language deficiencies or poor previous education as a third category of learning block, most educators view educational blocks as handicaps or learning disabilities rather than true learning "blocks." Nor do most educators view extrinsic interferences with student concentration and learning—disturbing noises, for example—as true learning blocks.

learning center See LEARNING RESOURCE CENTER.

learning contract An agreement between a student and teacher specifying an amount of

work or a project the student is to complete and the time limit for its completion. First introduced in 1920 in the Dutton, Massachusetts, school system, learning contracts may vary widely in detail, depending on the age of the student and the complexity of the work. Some may include the specific areas of study required, the methods and materials to be used, the skills to be learned, the criteria to be used for judging the work and the credits the student can earn. Learning contracts have produced mixed results in improving student performance. Most successful with mature students, they often provide less than adequate direction for many less capable students. On the other hand, learning contracts permit a teacher to individualize projects in ways that best serve the needs of each student. Correspondence courses represent learning contracts in adult education, with the syllabus detailing what the school expects of each student in exchange for a specific fee.

(See also DALTON PLAN.)

learning disabilities A broad spectrum of malfunctions of unknown cause that deter otherwise normal, healthy and intelligent individuals from understanding and acquiring language skills. Often defined by what they are not, as well as what they are, learning disabilities do not include any learning problems resulting from visual, auditory or motor handicaps, from mental retardation and emotional disturbances or from environmental, cultural or economic disadvantages. Indeed, to be classified as a learning disability, the dysfunction must represent a stark discrepancy between a normal or above-normal student potential as measured by I.Q. or comparable tests and the student's actual achievement. Estimates of the number of learning-disabled students in the general population vary from 1% to 30%, thus reflecting the vague, imprecise nature of definitions and the widespread ignorance about

learning disabilities among elementary and secondary school teachers and administrators, who ordinarily receive little training in the field. By definitions used under the EDUCATION FOR ALL HANDICAPPED CHILDREN ACT OF 1975, now the INDIVIDUALS WITH DISABILITIES EDUCATION ACT, the percentage of learning disabled qualifying for federal assistance is 6%.

True learning disabilities may appear at almost any age during the infant- and child-development years, probably because of imperfect neurological development. Symptoms of such disabilities may include an inability to listen, think, speak, read, write or do mathematical calculations or any combination thereof. The resulting frustration may produce secondary symptoms of hyperactivity, inattention or withdrawal, although none of these is itself a learning disability. The shifting number and types of learning disabilities were divided into four categories in the early 1990s: spoken language (delays, disorders and deviations in listening and speaking); written language (difficulties with reading, writing and spelling); arithmetic (difficulty performing arithmetic functions and comprehending basic concepts); reasoning (difficulty organizing and integrating thoughts).

Once called congenital word blindness, learning disabilities such as APHASIA and DYSLEXIA were thought to be the results of irreversible brain damage, mental retardation or hereditary imperfections until American neurologist/psychiatrist Samuel T. Orton began studying children with language disabilities in Iowa in 1925. What he found was an inordinately large number of children who, while officially classified as "feeble-minded," were normal in every respect except for a special difficulty in learning to read and a characteristic confusion in their efforts to recall letters and words. Calling the syndrome strephosymbolia (twisted symbols), he theorized that it stemmed from individual differences in neurological

development (maturational deviations) that prevented them from learning the way most children acquire a command of their language, that is by the whole-word method.

The whole-word method refers to the intuitive ability of the preschooler to see, hear, understand and eventually write whole words encountered in the environment—the neon sign “PIZZA,” the spoken word “bath”—and, assuming normal neurological development, smoothly interconnect the four sensory processes of seeing, hearing, understanding and writing such words. The aphasic child, on the other hand, may make no such connections; the dyslexic child may see or write the letters in garbled order and positions. Because of their normal intelligence, dyslexic and aphasic children are perfectly aware of their dysfunction. In the past, the inability of aphasic and dyslexic children to will themselves to function normally usually produced frustration and various forms of misconduct that traditionally led to their exclusion from the normal school process. The exceptions, including Prime Minister Sir Winston Churchill and Vice President Nelson Rockefeller, usually came from wealthy families who could afford private tutoring.

Orton’s recognition that learning disabilities were largely developmental opened the possibility of remediation as an alternative to abandonment to the world of the feeble-minded. Inspired by his findings and working closely with him in the early 1930s, mathematics teacher Anna Gillingham developed a new method for teaching the learning disabled. In contrast to the whole-word method, which taught children to read, write and spell by showing them the whole word first, she developed a so-called bottom-up method that started with individual letter sounds, built up to groups of letter sounds and, eventually, to whole words. To help students encode what they learned into their memory, she also introduced multisensory instructional methods, whereby

children traced each letter and word with their fingers, thus adding another sense to the learning process, as they followed the letter’s shape with their eyes, repeated the sounds aloud and heard others saying them. The ORTON-GILLINGHAM METHOD and variations thereof continue to be among the most successful methods of instruction of the learning disabled. Indeed, the passage of the Education for All Handicapped Children Act in 1975 required all public schools to provide such SPECIAL EDUCATION for children deemed learning disabled.

learning laboratory A specially equipped classroom designed to help students with a wide range of learning problems stretching from inadequate study habits to learning disabilities. Usually staffed by trained professionals, learning laboratories may provide individual tutoring, guidance for developing proper study habits, quiet study areas, audiovisual devices, programmed instruction, multimedia devices and a wide variety of self-instructional kits and materials.

learning module Jargon referring to any self-contained element of a broader, extended learning project. For example, adding a series of two-digit numbers would be a “learning module” within the broader scheme of learning addition, and addition itself would be a module of first grade arithmetic.

learning packet A portfolio containing a complete, self-directed learning activity or lesson plan for use by students. Available from commercial publishers, learning packets contain a set of directions telling students the educational goals of the particular packet and describing the series of activities students will engage in to reach those goals. Packets contain sets of materials for accomplishing the goals and a self-test for the students to use to evaluate their degree of success or the extent to which

they have reached the goals. Packets may focus on one subject or contain materials for several subjects, such as a geography sheet, a math page, a reading page with questions to be answered and a science page with an activity for constructing a weather vane, for example.

If they are not used too frequently, the advantage of learning packets is that they can be individualized for each student (especially when conceived and produced by teachers themselves). Moreover, they permit students to proceed at their own pace and can serve as a useful, well-defined **LEARNING CONTRACT** that forces each student to complete a learning activity, either in class, at home or both.

The disadvantage of learning packets is the tedium they produce among students who are forced to sit quietly, pursuing their projects individually and with little or no social or intellectual interaction with other students or the teacher. From the administrative point of view, learning packets can also serve as a crutch for inadequate or unmotivated teachers, who can simply assign packets to occupy students while they engage in nonteaching activities such as administrative paperwork or even personal matters.

learning resource center (learning laboratory) Any classroom or area devoted to the teaching of a broad range of learning and study skills at any level of education, from elementary school through university. Essentially designed to teach students how to learn, learning resource centers provide a wide range of nonclassroom services from simple tutoring to complex remedial help. Usually staffed by trained professionals, learning centers help students deal with the full range of learning problems, from inadequate study habits to learning disabilities. Formerly called learning laboratories, such centers provide all students with basic instruction in study methods and problem solving but, in addition, may provide indi-

vidual students with special, individually tailored services such as tutoring, guidance for developing proper study habits, quiet study areas, audiovisual and multimedia devices, programmed instruction, self-instructional kits and materials and computers. In addition, learning resource centers provide testing services and special help for the slower student, the learning disabled and the foreign-born student with English-language problems.

(See also **RESOURCE ROOM**.)

learning theory Any of a wide variety of explanations of the physiological and psychological phenomena that permit animals and people to acquire knowledge and behavior patterns. Among the many widely accepted theories of learning are E. L. **THORNDIKE**'s theory of connectionism, Ivan Pavlov's theory of classical conditioning and **JEAN PIAGET**'s theory of cognition.

(See also **LEARNING**.)

least restrictive environment (LRE) A legal requirement of the **EDUCATION FOR ALL HANDICAPPED CHILDREN ACT OF 1975** that all schools and other public, educative agencies provide a physical and educational environment that permits handicapped children "to the maximum extent appropriate" to be educated with nonhandicapped children. LRE requires handicapped children who require special education to receive as much of that education as possible in the same school and in the same classroom they would attend if they were not handicapped. Often confused with **MAINSTREAMING**, LRE refers strictly to the provision of special education in a conventional classroom, while mainstreaming refers to the participation of handicapped children in conventional education.

lecture method A method of direct instruction whereby the teacher transmits material

orally and visually, while students listen passively and take notes as study guides for eventual examinations or course papers. Usually reserved for upper grades of secondary school and all levels of college and graduate school, the lecture method is one of three basic TEACHING METHODS, along with coaching to teach a skill and Socratic questioning to enlarge understanding.

Lee-Clark Reading Readiness Test An early (1931) standardized diagnostic tool for teachers to use to determine whether kindergartners and first graders are academically and developmentally prepared to learn to read. Designed to provide four scores, one each for letter symbols, concepts, word symbols and a total, the test was meant to help teachers individualize reading instruction as much as possible.

Lee v. Weisman A 1992 U.S. Supreme Court decision that held prayer at a high school graduation in Providence, Rhode Island, to be unconstitutional. The Court called such prayer a “pervasive” government involvement in religious activity that left students little choice but to participate.

(See also PRAYER IN SCHOOL.)

legacy In education, a tradition of attending a particular school or college, handed down from parent to child. Many colleges and universities automatically give legatees preference over nonlegatees in the admissions process. At such schools, applicants with legacy are evaluated separately, and chances of admission are far greater than those of non-legatees. In the most selective private colleges, legatee chances of admission may be as high as one in two, compared with one in 12 for nonlegatees. In schools where legacy is a factor in admissions, legatees are usually admitted over non-legatees with equal qualifications. The basis for legacy is to encourage a sense of family tradition that

may generate liberal financial contributions and other expressions of institutional loyalty to schools.

Lemon v. Kurtzman A 1971 U.S. Supreme Court decision that declared direct state support of parochial schools in Pennsylvania an unconstitutional violation of the ESTABLISHMENT CLAUSE of the FIRST AMENDMENT, which bans state support of any religion. At the time, the state of Pennsylvania was reimbursing about 1,100 nonpublic, parochial schools (mostly Roman Catholic) for salaries of teachers, textbooks and instructional materials related to nonreligious courses. The Court ruling, which effectively overturned a similar law in Rhode Island, limited state funding of private schools to nonacademic activities such as busing, which could not be construed as furthering or inhibiting religious practices.

lesson plan A detailed, written description of the materials to be learned, the teaching methods to be used during each class and the homework to be assigned. Lesson plans are designed to keep teacher and students focused on specific topics and to ensure that the materials scheduled to be studied are indeed covered and learned. In addition, lesson plans provide clear-cut directions for substitute teachers.

liberal arts In modern education, a broad area of academic subjects unrelated to the sciences or to professional or vocational preparation. The liberal arts include literature, mathematics, history, philosophy, language studies, music and the fine arts, among other subjects. The term dates back to ancient Greece, when philosopher/educators such as Plato and Aristotle defined the liberal arts as seven in number and consisting of those subjects that helped develop the upper-class citizen’s intellect and morality—as opposed to the useful or practical arts, for the lower classes.

In the Middle Ages, the seven liberal arts were studied in two stages at the university level: the elementary trivium, leading to a bachelor's degree, and the advanced quadrivium, leading to a master's degree. The trivium ("three roads") consisted of three subjects: grammar, rhetoric and logic. The quadrivium ("four roads") consisted of mathematics and astronomy; the three philosophies, or natural philosophy (physics), moral philosophy (religious studies) and mental philosophy (ethics); ancient languages (biblical and classical); and literature, music (mostly liturgical) and divinity.

At the beginning of the era of progressive education, early in the 20th century, the American educator and philosopher JOHN DEWEY redefined the liberal arts as "the sort of education that every member of the community should have: the education that will liberate his capacities and thereby contribute to his own happiness and his social usefulness." In effect, the liberal arts and a liberal education are designed "to free the mind and spirit from specialized, practical, vocational education."

For a variety of reasons, however, many American political leaders, many educators and, apparently, many college students have emphatically disagreed with Dewey's assessment of the liberal arts. Indeed, of students at four-year colleges in the United States, the percentage majoring in liberal arts subjects declined to fewer than one-third by the end of the 20th century. Only 17% of all college students attended pure liberal arts institutions in 2001, compared to 50% in 1960. In the last two decades of the 20th century, about 50 such institutions had ceased operations. During most of that time, the United States and the Soviet Union were engaged in a "cold war," in which each sought to extend its international sphere of influence with impressive technological gains in the military and aerospace sectors. In the United States, American political leaders

and educators stepped up their efforts to improve and expand science, mathematics and engineering education and encourage the young to study related subjects. At the more mundane level, many students feared (justifiably) that a liberal arts major would not be an effective vehicle for finding top-paying jobs after graduation. The net result was a 14.6% drop in English and literature majors at four-year colleges, a 32.3% decline in foreign-language majors, a 40.7% decline in mathematics majors, a 7.6% decrease in philosophy majors and a 13.8% drop in history and political science majors. The only liberal arts majors that showed an increase were the performing arts, with a jump of 53%. In contrast, the number of business administration majors soared by more than 50%, to more than 225,000, or almost 19.5% of all majors at four-year colleges—by far the largest single group of majors. Education majors, in contrast, dropped nearly 40%, to about 105,500, or almost about 9% of all college majors.

librarian A professional library manager, whose training requires a bachelor's, master's or doctoral degree in library science. The primary duties of a librarian include selecting, ordering, purchasing, cataloging and maintaining books and audiovisual materials and controlling their circulation. In addition, librarians must purchase and maintain ancillary equipment such as computers, mechanical handling equipment, shelving and storage facilities. They must oversee short-term and long-term building maintenance, manage fund-raising efforts and community service programs and serve as liaisons with the public, with educators, with school authorities and with teachers and their students. Technological advances have extended their work to include evaluation and purchase of rights to access databases via the Internet and CD-ROM networks. They must not only be proficient in using on-line services and the

Internet, they must be able to assist users in understanding and using on-line resources. The need for such technological skills have lifted starting salaries of school librarians considerably, from the \$20,000-to-\$30,000 range in the late 1980s to the \$40,000-to-\$50,000 range by 2005.

Once little more than clerical work, librarianship grew more complex in the late 19th century with the expansion in the number of printed books and periodicals that became available with the growth of industry. MELVIL DEWEY established the first training school for librarians at Columbia University in 1887. McGill University in Montreal started a Graduate School of Library Science in 1904 but did not begin granting a B.L.S. degree until 1931—spurred largely by criticism from the CARNEGIE FOUNDATION FOR THE ADVANCEMENT OF TEACHING that library training schools emphasized clerical training at the expense of the professional aspects of librarianship. Since then, as electronic information began doubling by the hour in the first decade of the century, studies in librarianship and library science have expanded into the broad field of information. Former schools of library science now call themselves schools of information, with their graduates assuming the title of information specialist rather than librarian. Studies for a degree in information technology now include publishing history, circulation, reference work, technical services (acquisition, cataloging, binding and preservation), library architecture and design, computer systems analysis, electronic publishing, and telecommunication and computer networks. More than 120 colleges and universities offer bachelor's degree programs in library science. Librarians at larger academic libraries usually have a master's degree in library science and often a second master's degree in an academic discipline such as science, music, literature or business to allow them to bring a greater depth of knowledge to

collections within their libraries. Directors of large academic and public libraries usually have doctorates.

library A specially housed collection of books, periodicals, manuscripts, nonprint media such as recordings and films and a wide variety of other materials for general or restricted public use but seldom offered for sale. There are nearly 125,000 libraries in the United States. All fall into one of three general categories:

- Freestanding, community (tax) supported public libraries (about 9,000) open to the general public and from which books may be borrowed for limited periods, usually at no charge, except for an annual membership fee;
- Academic (college and university) and school libraries—about 3,000 of the first and about 100,000 of the second, with many of the public elementary and secondary school libraries called MEDIA CENTERS Academic and school libraries are usually designed to support the school curriculum and associated student and faculty research and are open to students and faculty free of charge. Many academic libraries also open their doors to accredited researchers and scholars with no direct ties to the supporting institution. Harvard University remains America's largest research library, with more than 14 million volumes. Yale has more than 10 million, University of Illinois at Urbana-Champaign more than 9.3 million, University of California at Berkeley nearly 9 million and University of Texas nearly 7.8 million.
- Specialized libraries such as art, museum, medical, legal, corporate and rare book collections housing discipline-specific collections for restricted viewing and study by members and accredited researchers.

Libraries date back to the most ancient Middle Eastern civilizations, between 3000 and 2000 B.C., when they were used to house clay tablets inscribed with business and legal

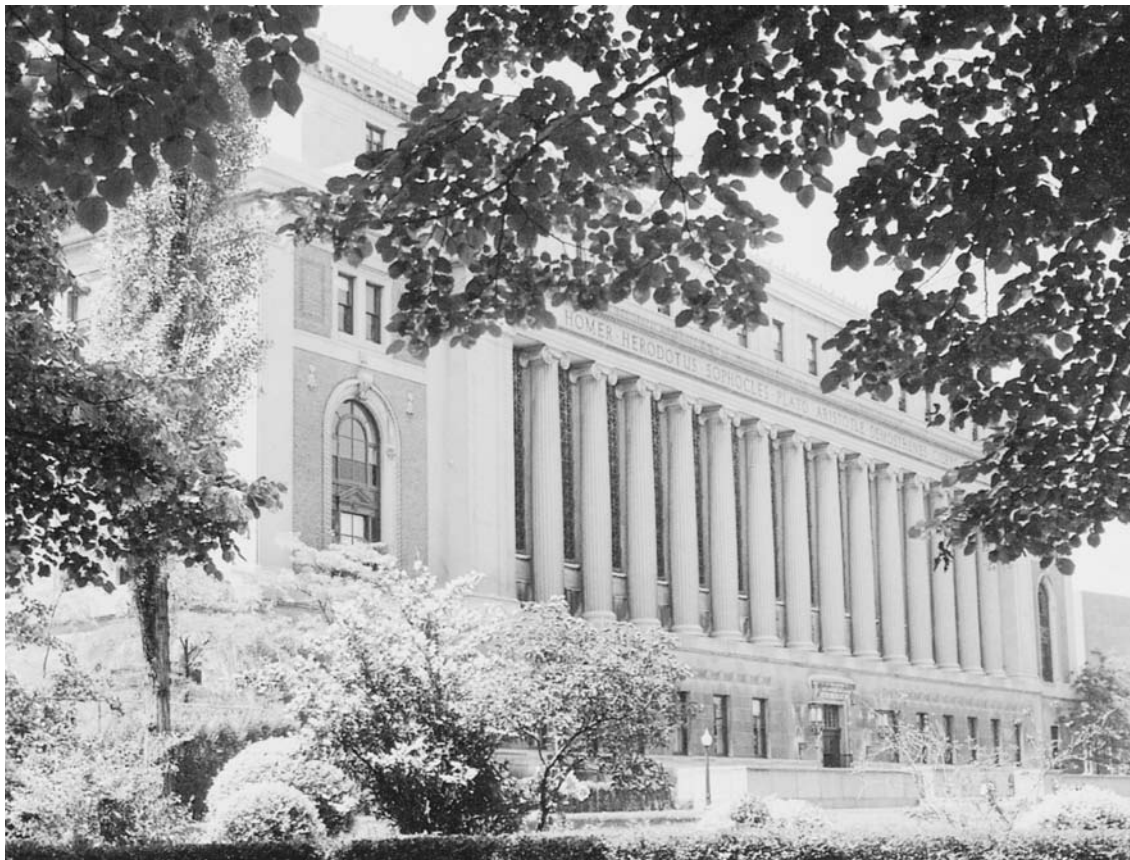
records. In the New World, the first colonists arrived with large collections of books. Reading had become a passion of the masses in England in the 200 years after Gutenberg, a passion comparable to 20th-century America's love for television. "Never in any age were books more sought for and better esteemed," wrote an anonymous English chronicler in 1590. Thus, the early settlers arrived with sizable collections of books to fill their own private libraries.

The first quasi-public library was the result of John Harvard's 400-volume bequest to Harvard College in 1638, for use by students and faculty. The first truly public libraries were the

work of Thomas Bray, an Anglican priest who had been designated to supervise religious affairs in Maryland. In the years between his appointment in 1695 and his arrival in 1700, Bray arranged for the establishment of libraries throughout the colonies. The first, founded in Annapolis with 1,095 volumes, was the earliest lending library in the English-speaking colonies. Bray established more than 30 others in Boston, New York, Philadelphia, Charleston and in rural parishes throughout Maryland. Although liturgical works formed the core of these collections, they also contained works designed to educate: grammar, rhetoric, poetry, logic, metaphysics, ethics, economics, politics,



School libraries give students access to computers for research.



The Butler Library in New York City. One of Columbia University's 26 libraries, it houses 6 million volumes, 4 million microfilm items and 59,000 periodicals. (Columbia University)

law, history, physiology, medicine, mathematics, trade and commerce. Bray sent detailed instructions to the priests who ran the libraries on how to house, shelve and circulate books in their collections.

The thirst for books being what it was, the Bray libraries expanded rapidly in the next century, as did private collections, whose owners often left them as bequests that formed the bases for university library collections. By 1766, the Harvard library had grown to more than 4,000 titles, even after fire had destroyed large

parts of the original collection. Two large bequests enlarged Yale College's library to about 2,500 titles by 1783, while King's College (now Columbia), the College of New Jersey (now Princeton), the College of Philadelphia (now the University of Pennsylvania) and the College of William and Mary had each built sizable collections.

Meanwhile, BENJAMIN FRANKLIN developed an entirely new type of library, the subscription library, which evolved into the American public library we know today. Franklin and

his friends had formed an intellectual discussion group called the "junto," whose members agreed to lend each other books from each other's extensive collections, thus giving each "the advantage of using books of all the other members, which would be nearly as beneficial as if each owned the whole." In 1731, Franklin "proposed to render the benefit from books more common by commencing a public subscription library." His plan called for an association of subscribers, each of whom paid 40 shillings for the purchase of the initial collection and 10 shillings a year thereafter to expand the collection. The first books acquired by the Library Company of Philadelphia, which Franklin and two other junto members selected, were purely practical. An autodidact himself and a great believer in self-education, Franklin stocked the library with atlases, histories and a variety of handbooks for would-be entrepreneurs—but no theological works. Franklin's library was imitated everywhere: three in Philadelphia alone and others in Germantown and Lancaster, Pennsylvania; Trenton, New Jersey; New York City; Charleston, South Carolina; and dozens more throughout the colonies.

The Industrial Revolution of the 18th and 19th centuries spawned the founding of many specialized private libraries, some of which offered formal instruction for self-improvement for apprentices, tradesmen, merchants and others. Social libraries also began to form during the early 19th century, some catering to special interests such as history, others to general interest in literature, others, such as the LIBRARY OF CONGRESS, to specialized professional groups, and still others to the adherents of specific religious sects. All such social libraries provided opportunities for discussion groups, mutual education and self-improvement, and they rapidly became as central to community life as churches had been in the nation's earlier years.

The expansion of scientific and technical knowledge fostered a growth in the demand for greater and easier access to books. As the number of colleges grew, they opened and expanded huge new quasi-public libraries. But it was industrialist ANDREW CARNEGIE who was responsible for the growth of the free public library in the 1890s. A penniless bobbin boy from Scotland, the young Carnegie had educated himself in a mechanics library in Pittsburgh, and he sought to offer the same opportunity to other children in his adopted country. Although there were about 4,000 libraries in the United States, only about 1,000 were "free public libraries" owned by the community and thus open to all. Carnegie distributed more than \$39 million to more than 1,400 American communities to build library buildings, stipulating only that they be "the property of all," open to all and maintained by community taxes. "I do not think that the community which is not willing to maintain a library had better possess it," said Carnegie. "It is only a feeling that the library belongs to every citizen, richest and poorest alike, that gives it a soul, as it were. The library buildings which I am giving are the property of all the members of the community which maintains them."

Accompanying the growth in the number of libraries came a philosophical debate over their ultimate purpose. Unlike Carnegie, many philanthropists who underwrote the establishment of libraries saw their ultimate purpose as being conservatories of the world's knowledge, dedicated to preserving the world's knowledge for scholarly research and protecting books and manuscripts from destructive handling by the public. It was left to MELVIL DEWEY to promote the role of libraries as popular institutions by organizing a professional organization for librarians (the American Library Association) in 1876 and convincing members to adopt the popularization of libraries as their

official goal. By organizing the first training school for librarians, opening the field to women and establishing the first system of traveling libraries, Dewey further assured the library's future as an educative institution of the people rather than the scholarly elite.

Library contents and design changed radically during the last half of the 20th century, when a vast proliferation in the number of published works left most libraries too small to stock even a small percentage of new works. Moreover, the advent of and demand for audiotapes, videotapes, compact discs and other nonprint media put library space at an even greater premium. Many libraries turned to microfilm to store text from newspapers, magazines and professional, scientific and scholarly journals. Space-clogging card catalogs were transferred onto high-speed integrated computer systems from which readers and researchers could obtain instant bibliographic data on any work by subject, author or title. The systems also served as a central tool for library administration, allowing librarians to control circulation, acquire new works, keep track of library periodical subscriptions and generate reports, bibliographies, notices and statistics. Still another solution to space problems was the establishment of interlibrary cooperative agreements that allowed libraries to avoid duplicating each other's collections while allowing each library in the cooperative group to borrow books on behalf of its member readers from every other participating library. Such cooperative agreements also allowed libraries to limit acquisitions by specializing, with one library in the cooperative specializing in music, another in art, and so on.

By 2005, America's towns and cities boasted nearly 16,200 public libraries. The Chicago Public Library was largest, with 78 branches holding about 10.75 million books. Next in order of size of holdings were the public libraries in Cincinnati and Hamilton

County (41 branches, 9.9 million books), Queens Borough Public Library (New York City, 62 branches, 9.7 million books) and Los Angeles County (84 branches, 9.2 million books). The public libraries in Detroit, New York (in Manhattan, and once the nation's largest), Philadelphia, Dallas, Brooklyn, and Los Angeles (city) each had between 5 million and 7.5 million books.

In addition to the nation's public libraries, nearly 77,300 public schools, or 82%, have libraries, with an average of two librarians and 1,800 books per 100 students. More than 17,000 private schools, or about 63%, have libraries, with average holdings of more 2,850 books per 100 students. Of the more than 4,000 degree-granting institutions of higher education, nearly 3,700, or about 90%, have their own libraries, with an average of about 175,000 volumes in each library. Harvard University has the largest collection, with more than 15 million volumes, followed by Yale, with 11.4 million, and the University of Illinois at Urbana-Champaign, with about 10.2 million. Fifteen universities had between 5 and 8 million books, and more than 100 had collections of one million or more. Nearly all public libraries—in school and out—offer Internet connections that expand their collections to all but infinite numbers by providing access to public and academic libraries and such national and international libraries as the Library of Congress. About half the public libraries have wireless Internet access, and about half the public libraries and all school libraries filter Internet access to prevent minors from accessing salacious or inappropriate materials.

Universal access to the world's books via the Internet and the development of digitized libraries may well put an end to many traditional bricks-and-mortar libraries by converting every computer into an electronic "virtual library." In 1994, the University of Southern

California opened America's first digitized library by first scanning its own thousands of books before moving them into a storage center and replacing library shelves with 250 computers, communal work areas and rooms for students to work on multimedia projects. Since then, the main University of Texas campus at Austin and dozens of other universities such as Emory and the universities of Arizona, Georgia and Washington have replaced their conventional libraries and archival materials with digitized libraries. Smaller colleges such as Mount Holyoke, Dickinson and Hamilton have followed suit.

In addition to digitization of local college and university libraries, a number of projects are under way to create mammoth global digitized libraries. The University of Illinois's Project Gutenberg has been digitizing millions of out-of-copyright books since 1971. Accessible by computer from anywhere in the world, the university's digitized library consists of three broad sections: light literature (*Alice in Wonderland*, *Aesop's Fables*, and so on), heavy literature (for example, the *Bible*, *Moby Dick*, Shakespeare's works), and references (almanacs, dictionaries, thesauruses, and so on). In addition, the search engine Google is developing a mammoth GOOGLE PRINT LIBRARY PROJECT to provide access to all information in the more than 30 million works at five major research libraries: Harvard, Stanford, the University of Michigan at Ann Arbor, Oxford University in England and the New York Public Library. By scanning every published book in its partner libraries, Google will provide complete access to all out-of-copyright materials in the public domain and limited access to materials protected by copyrights, with appropriate references to publishers, booksellers and libraries that can provide the complete book. In addition to the Google project, the Library of Congress is creating the WORLD DIGITAL LIBRARY—an on-line repository of cultural artifacts from the world's

national and international archives. Another giant search engine, Yahoo, is working with the University of California system, University of Toronto, the European Archive and National Archives of England to digitize millions of books and archives in their combined libraries. Calling its venture the Open Content Alliance, Yahoo is limiting what it will scan to materials in the public domain that are no longer protected by copyright.

Digital libraries are not without their critics, of course—especially on university campuses, where many academic leaders fear hard-copy texts will all but disappear and digitization will permit students to pluck data from an array of books and forgo reading any of them in their entirety. "If you can get out of a four-year program at a great university without reading a book, there's a problem," warns Michael Gortman, president of the American Library Association.

Book publishers, however, saw the costs of publishing hard-copy texts soar nearly 200% over the last two decades of the 20th century, all but pricing conventional books out of the market. With the average college student now forced to spend an average of nearly \$1,000 a year on textbooks, many students are simply forming groups to buy a text cooperatively. Faced with soaring costs and declining sales, publishers began digitizing their books at the turn of the century; one group of publishers joined with seven dental schools to digitize 2.2 million pages, 300,000 images, 400 pounds of textbooks and 20 hours of video that combine to make up the required out-of-class study materials for the standard four-year curriculum at American dental schools. The result is a single DVD weighing two ounces and costing no more than the combined costs of all the books and materials it replaces—about \$6,000—but simple to update each year for both publishers and students.

In less technical areas, many publishers are able to produce "e-textbooks" at half the price

of hard-copy tomes. In 2000, McGraw-Hill began producing electronic versions of many of its best-selling textbooks and, on request from professors of well-attended courses, producing customized electronic textbooks for specific courses, combining lectures, articles and chapters of specific books into a single e-text. Thomson Higher Education offers e-textbooks under the Advantage Series imprint at half the price of paper versions, as does Pearson, with its Safari-X imprint, and Houghton Mifflin. Online textbooks combine the advantages of books with search engines that can extract data and course-management software that can highlight and organize materials, produce outlines or piece together essays. Some, but not all, can be downloaded in their entirety into hard-copy format, and all can easily be updated periodically by author, publisher and reader without publishing an entirely new edition. College bookstores usually offer electronic textbooks at two-thirds the price of hard-copy versions, and at some colleges, bookstores offer recordings of all the lectures of various professors, thus obviating the need for attending those lectures or taking notes. Purdue University has recorded lectures from 70 courses that students can download onto digital audio players.

In addition to textbook publishers, publishers of scientific journals are digitizing their articles, and, indeed, two digitized libraries of scientific articles have been assembled—one at the National Institutes of Health's National Center for Biotechnology Information and another dubbed Open Archive by a group of scholars at the University of Southampton, England.

Library of Congress A library established in 1800 to provide new, inexperienced members of Congress with reference works related to law, legislation and the technical aspects of governing. President John Adams approved the original act of Congress appropriating \$5,000

to found the library "for the use of Congress." Adams's successor, Thomas Jefferson, helped expand the library, which was originally housed in a room in the capitol. In 1802, Jefferson appointed the first librarian of Congress, who continues to be a presidential appointee requiring Senate approval.

In 1815, after the British had burned the library during the War of 1812, Jefferson offered his 6,000-volume personal library—twice the number of books destroyed by the British—as a replacement, which Congress agreed to purchase. During the 19th century, the library's collection grew to include appropriate services for the entire government and the public. Funded by Congress, the library acquires many works through gifts and from deposits of new books, scholarly works, manuscripts, pamphlets, periodicals and films, as required by copyright law. Today's collection includes works in more than 470 languages. In addition to its nearly 30 million books, the library houses manuscripts, the personal papers of many presidents and government officials, newspapers, maps, music scores, microfilms, films, photographs, recordings, prints and drawings, Braille volumes and recorded, or talking, books. The library maintains the Congressional Research Service to provide members of Congress with needed materials and a separate research unit in each department to serve the public.

As the size of its collection grew too large and diversified for the DEWEY DECIMAL SYSTEM, Library of Congress librarian Dr. Herbert Putnam developed a new classification system for large collections, especially university libraries with enormous amounts of research manuscripts. Called the LC (Library of Congress) system, it divides all knowledge into 21 large classes and assigns one capital letter to each, omitting only the letters I, O, W, X and Y. The letter N, for example, represents the broad division of the fine arts, with a second letter further



The Library of Congress, Jefferson Building

classifying the original letter. NB represents books on sculpture, ND painting and NK decorative arts. The addition of a three-digit number further classifies the book. ND 813 G7, for example, is a book on painting and, more specifically, on the Spanish painter Francisco Jose de Goya y Lucientes.

licensing of teachers The official certification by state or other authorities of a teacher's qualifications to serve as an instructor. Teacher licensing in the Anglo-Saxon world dates back to the early 12th century, when schools emerged as adjuncts of local churches and monasteries and clerics were forced to appoint lay teachers to instruct the young. In 1553, the Catholic Queen Mary of England ordered the

examination of all schoolmasters, preachers and teachers of children to determine their orthodoxy; they were removed if found suspect. Under Mary's Protestant sister Elizabeth I, the licensing principle became law in 1571 and traveled to America with the colonists in the 17th century.

Because of a shortage of qualified teachers, it was a difficult principle to enforce, but in 1654 the Massachusetts general court ordered town officials in the province not to allow anyone to teach who was of "unsound faith, or scandalous in their lives, and not giving due satisfaction according to the rules of Christ." In 1686, in an effort to spread Anglican influence, the governor assumed the right to approve masters. In addition, King James II ordered that

"no schoolmaster be henceforth permitted to come from England and to keep school within our province of New York, without the license of the . . . archbishop of Canterbury." Charles II had introduced licensing of teachers in Virginia in 1683, ordering that every schoolmaster have a license from either the bishop of London, if he came from England, or from the governor.

Licensing did not necessarily reflect any qualifications beyond loyalty to the Crown and the Church of England. As the number of dissenters and Protestant sects multiplied and the clerics in each village church took control of education in their communities, licensing all but disappeared. With independence, clerical control of parish schools all but ended state authority over education and teacher qualifications. Anyone could—and often did—teach, although most teachers tended to be clergymen and college students who needed to earn money between semesters by teaching younger children. Approval and hiring of lay teachers were usually left to local clerics or church vestrymen.

Today's licensing procedures date back to the establishment of the first teacher training school, founded by HORACE MANN in Lexington, Massachusetts, in 1839 to serve the new, state system of public schools—the first such system in the United States. As other states established similar systems, they also built teacher training schools. Gradually, certificates from such schools became a requirement for teaching in public schools. Although all states continue to require a teaching certificate for a job as a public schoolteacher, no such requirements apply to teaching in private schools, which determine teacher qualifications independently.

(See also ALTERNATIVE CERTIFICATION; CERTIFICATION, PROFESSIONAL.)

life adjustment education A curricular reform, popular in the 1940s and 1950s, that taught schoolchildren practical aspects of living. A misinterpretation and corruption of

John Dewey's theories of education, the curriculum marked the beginning of self-improvement courses that still abound in the general education track and dilute academic aspects of English, history and other courses. Thus, English courses not only taught how to write letters, but also to conduct polite conversation. Social studies taught how to behave at home and on dates. Most science and mathematics courses for girls were replaced with sewing, cooking, housekeeping and other "practical" studies.

Developed at Harvard University in 1939, the curriculum sought to convert Dewey's theories of using firsthand experience to learn new concepts by reducing the level of such experiences to the most ordinary. Civics courses and economics were replaced with instruction on being good citizens and cooperative family members and developing self-esteem. From its inception, life adjustment education has remained controversial in the face of the contention of essentialists and other proponents of BACK-TO-BASICS education that the route to self-esteem and competence in life is academic competence and development of higher-order thinking skills.

lighthouse district A term that refers to any school district offering new, innovative and exemplary educational programs that make it a beacon for other school districts.

Likert Scale A widely used five-point scale for measuring attitudes. Developed in 1932 by psychologist Rensis Likert (1903–81), the scale measures individual or collective attitudes by restricting the answers on specific questions to five: strongly agree, agree, no opinion, disagree or strongly disagree. The answers are scored, respectively, from five to one, thus allowing an individual's or a group's average score to reflect overall attitude about a particular subject. The Likert Scale is used both by teachers to measure

student attitudes and by school administrators to measure teacher attitudes.

line and staff chart A chart that graphically depicts the relationships among administrators and other supervisors and their faculty and staff, with each member appearing horizontally or vertically according to their authority and remuneration.

linguistics The study of written and spoken language, including PHONETICS (speech sounds), phonology (translation of sounds to written words) and SYNTAX (organization of words and sentences). The basic tool of linguistics is structural analysis, whereby each component of a word—that is, its root, prefix and suffix—is studied.

Branches of linguistics include historical/comparative linguistics, psycholinguistics, sociolinguistics and applied linguistics. Historical/comparative linguistics traces the origins of languages, their changes according to time and geography, and the historic relationships among languages, dialects and language groups. Psycholinguistics studies the influence of emotions and other psychological factors on language and the nature of language exposition. Applied linguistics involves practical applications of linguistic theory and method to translation, computer software, design of public documents, the law, language development, speech pathology, communication in different settings and teaching of languages and language skills, such as reading and writing. Because children have already developed their own linguistic patterns by the time they are six years old and ready for first grade, applied linguistics is especially important to elementary school teachers faced with bilingual students or children speaking any form of nonstandard English.

Lippmann, Walter (1889–1974) American author, journalist, editor, presidential-

advisor and one of the most important political and social critics of his era. Although his social criticism shook the American education establishment in the 1920s, it had little lasting effect. New York-born and Harvard-educated, Lippmann published his first book in 1913, only three years after graduation, and a year later he went on to cofound the *New Republic*, a liberal weekly journal. An associate editor, Lippmann produced a torrent of articles that so influenced President Woodrow Wilson that he appointed Lippmann a policy advisor at the drafting of the World War I peace treaty at Versailles, France. In 1921, Lippmann joined the *New York World* as a columnist and eight years later became its editor. During his 10 years there, he wrote more than 2,000 columns and three influential books. The latter were destined to have as much of an impact on education as his previous works had on national and international politics.

In *Public Opinion* (1922), Lippmann set down his distinction between “news” and “truth.” The former, he said, was the product of “a selective process” in which truth is filtered through the minds and senses of various interest groups, censors, reporters and editors. Truth, on the other hand, is the product of organized intelligence by disinterested experts. To educate the public well enough for it to govern itself intelligently, he concluded, teachers must instruct the young to recognize the differences between news and truth. Teachers, he said, must “make the pupil acutely aware of how the mind works on unfamiliar facts” by teaching them how propaganda works, how to examine sources of information, how to be aware of their own subjectivity and how to be consistently rational and objective in coming to their own conclusions about the world.

In *The Phantom Public: A Sequel to “Public Opinion”* (1925), Lippmann enraged many politicians and school board members who controlled education by drawing distinctions

between “insiders,” those engaged in the actual business of government or education, and “outsiders,” who make occasional judgments about the work of insiders. “Only the insider can make decisions, not because he is inherently a better man but because he is so placed that he can understand and can act. The outsider is necessarily ignorant, usually irrelevant and often meddlesome, because he is trying to navigate the ship from dry land.” Calling for an end to control of education by elected school board members with no professional qualifications and, at times, even less schooling, he bemoaned the unwise restrictions imposed on schools by ill-informed, popularly elected school boards. In *American Inquisitors: A Commentary on Dayton and Chicago* (1928), he described the SCOPES MONKEY TRIAL as a classic confrontation between ignorant majorities and informed experts.

Ironically, Lippmann’s call for reform of education had little or no impact, except to produce eloquent praise by leading educators, including Lippmann’s friend JOHN DEWEY. Lippmann left the *World* in 1931 and began a 40-year career as a columnist, producing a twice-weekly column entitled “Today and Tomorrow” for *The New York Herald-Tribune*, which syndicated it in 200 influential newspapers around the world. Although he influenced the thinking of world leaders, Lippmann had little immediate impact on the general public. His 1955 book *Essays in the Public Philosophy*, for example, castigated so-called educational modernists who had replaced traditional studies in the school curriculum with so-called LIFE ADJUSTMENT EDUCATION, but it would be more than 20 years before educators and the American people came to the same conclusion.

listening An essential language and communication skill consisting of hearing and then translating aural data into action. Basic to the acquisition of knowledge, listening is one of

the first communicative skills learned by infants. Its development, however, depends largely on specific instructional techniques, first by parents and later by elementary school teachers. Parents teach listening most effectively when they themselves listen to children’s chatter. Negative responses to such chatter, no matter how tired, impatient, annoyed or bored the parent may be, tend to discourage children from speaking and, in turn, listening. If listening is unimportant to parents, it becomes unimportant to children.

Although students spend more of their school day listening than talking, a host of factors affect development of their listening skills, including teacher methods of presentation, their lengths of presentation, relevance to daily life, student motivation, distractions, noise pollution and student psychological and/or physical state. Aside from the importance of listening to learn information aurally, listening is also essential for absorbing written materials. For these reasons, development of listening skills has become a formal part of the language arts curriculum, with teachers actively engaging students in listening exercises, such as asking students to describe or summarize, both orally and in writing, what they have just read or heard. Formal listening training should begin in preschool, by teaching children to follow simple directions, to respond to requests for attention, to listen to others quietly and courteously, to take turns talking and not interrupt or distract others, to listen carefully to short stories, to repeat sequences of sounds, to repeat sequences of orally given numbers, and to repeat details of a simple story in sequence.

literacy See ILLITERACY.

locational skills A group of reading skills that permit students to find a variety of written information from reference texts. Taught during the early elementary school years, loca-

tional skills include the ability to find specific words in an alphabetized list, to find specific pages from a table of contents or index, to find the pronunciation and meaning of words and phrases from dictionaries and glossaries, to obtain data from reference books and encyclopedias and to use classification systems to locate library materials. Ancillary skills developed with locational skills are the ability to evaluate and use various types of resources and reference aids, rapid-reading skills, and skills in organizing and converting collected data into a finished report.

Locke, John (1632–1704) English philosopher who espoused philosophical empiricism and, through the influence of his writings, became the true “author of the American Revolution.” Although that title is usually ascribed to Thomas Jefferson, the latter gladly acknowledged Locke’s writings on the “rights of man” as his source for the principles outlined in the Declaration of Independence and the Preamble to the CONSTITUTION OF THE UNITED STATES.

Locke’s influence on American education was as far-reaching as his influence on American politics. His philosophy proved ideal for a people fleeing state controls for an independent life in which each individual controlled his own destiny in a new world of limitless frontiers. Locke rejected the concept of the divine right of kings and the concept of predestination. Ultimate sovereignty, he maintained, rests in the people, not the state. He insisted that all men were indeed created equal, born with minds that were, in effect, blank slates, or *tabulae rasae*, on which experiences inscribed all knowledge. In *Some Thoughts Concerning Education*, Locke concluded that men may be variously endowed by nature, but that they are shaped by knowledge. He called universal education essential for the survival of any nation; to restrict access to education to clerics, scholars and noblemen would assure a nation’s

demise. “Knowing is seeing,” he declared, “and, if it be so, it is madness to persuade ourselves that we do so by another man’s eyes, let him use never so many words to tell us that what he asserts is very visible.”

Locke called for separation of church and state and the development of curricula based on “their usefulness” to man “in the future course of his life.” These precepts would be enthusiastically embraced by later colonial leaders such as Jefferson and BENJAMIN FRANKLIN who went on to secularize the curricula of colonial grammar schools and colleges by including utilitarian courses in science, mechanics, commerce and other subjects needed to build a new nation.

Log College A small, rudimentary school, about 20 feet square, erected in the mid 1720s by the Rev. William Tennent (1673–1702), a Scottish Presbyterian evangelist who had migrated to Neshaminy, outside Philadelphia. At the time, there was an acute shortage of ministers to man the churches in the ever-increasing number of communities sprouting along the expanding frontier. England could not spare any, and Harvard and Yale together produced only 850 ministers between 1701 and 1740. The shortage was greatest in the middle colonies, where Tennent had settled and from where he railed at the elitist admission policies of Harvard and Yale and their slow pace in producing new clerics. He decided to build his own “college” to train plain but pious youths for the ministry. The school had no formal name, and Tennent admitted students of the most humble background and awarded no formal diploma. Because of the commonness of its students and its lack of an official charter from church or Crown and because its curriculum was not as broad as that of either Harvard or Yale, it was harshly criticized and ridiculed by conservative voices in the church. Indeed, they gave Tennent’s rude little building its name—Log College—in derision.

Despite its size and limited curriculum, the influence of Log College proved far-reaching. It turned out several dozen “New Light” Presbyterian ministers who, imbued with Tennent’s spirit of egalitarianism, founded similar schools in other parts of the middle colonies, including the College of New Jersey (later Princeton College). Those schools, in turn, graduated the founders and presidents of several more colleges and at least one signer of the Declaration of Independence.

logic The science of valid reasoning. An essential part of instruction at every level of formal education, logic dates back to ancient Greece, when ARISTOTLE formulated the rules of syllogistic reasoning, based on four forms of argument: universal affirmatives (All As are Bs), universal negatives (No As are Bs), particular affirmatives (Some As are Bs) and particular negatives (Some As are not Bs). A syllogism consists of two premises and a conclusion, each with one factor in common. Thus, “all mammals nourish their young with milk from mammary glands; all humans nourish their young with milk from mammary glands; therefore, all humans are mammals.”

Logic is not, however, designed to produce truth—but only a valid argument. A valid argument based on one or more false premises usually produces a false, albeit valid conclusion. Thus, “all dogs are carnivores; all humans are carnivores; therefore, all humans are dogs.” The range of classical, Aristotelian logic expanded beyond the syllogism in the early 20th century with the introduction of more complex types of assumptions and connections, but both modern and classical logic continued to be based on deductive reasoning, whereby a true conclusion can be drawn with certainty from true premises.

Essential to development of skilled reasoning, logic was an integral part of the primary school and secondary school curriculum from

the founding of the first schools in the colonial era. Taught informally or formally, depending on the age of each student group, it disappeared from the curriculum in the 1950s, 1960s and 1970s in favor of so-called life adjustment education. According to U.S. Department of Education studies, in the 1980s it was clear that “public school students of all ages [were] . . . deficient in higher order thinking skills.” Such thinking skills are the result of formal or informal instruction in logic.

Many public elementary and middle schools subsequently reintroduced informal instruction in logic, integrating it into mathematics, science and other classes. Typical logic instruction asks students to read a question first, then to identify the problem in their own words and determine specifically what information is relevant to the problem and what is irrelevant. Students are then asked to generate possible paths to a solution, evaluate them all, select one and explain the reasoning for that selection. The solution is then implemented. It is the generation and evaluation of alternative solutions that converts the exercise from problem solving into logic-based decision making.

longitudinal study A long-term research project that measures certain characteristics of a specific group of subjects over many years. Enormously difficult to conduct and often of questionable validity, longitudinal studies have, from time to time, been used by educators to measure the effects of various types of education. One of the first, and still among the most renowned, longitudinal studies was by LEWIS M. TERMAN and his associates, who followed a group of 1,528 gifted children (with I.Q.s above 140) from 1922 until 1962, six years after Terman’s death. The study attempted to investigate the connections between I.Q. and a large assortment of other characteristics, including intellectual and academic achievement, occupation, family income, marital status, health, general

adjustment and feelings of accomplishment. A second renowned longitudinal study was “The EIGHT-YEAR STUDY” of the effects of progressive education on the academic, artistic and extra-curricular achievements between 1930 and 1938 of 1,475 students from 30 selected high schools. It compared their achievements with those of 1,475 matched students who had not experienced progressive education.

The furthest reaching longitudinal study ever conducted in the field of education is called PROJECT TALENT, a study that began in 1960 with 440,000 students in grades 9 through 12 in more than 1,300 high schools—about 5% of all the schools in the United States. The study assessed student talents, aptitudes, abilities and interests every year the students remained in high school, and then one, five, 10 and 20 years after they graduated.

Louisiana The 18th state to join the Union, in 1812, and a founding member of the Confederate States of America, in 1861. Despite a tradition of public schooling that dates back to the 1720s, Louisiana public schools have ranked lowest among all state public school systems for generations. In 1999, however, the state’s dismally low educational standards so lowered labor force skills that the business community combined with reform-minded political leaders to apply what they called “shock therapy” to public school systems. Unable to participate in the nation’s general prosperity, the state raised teacher salaries and imposed certification requirements for new teachers. The state also raised minimum academic performance levels for promotion and graduation at the state’s nearly 1,500 public schools. At the time, only about 20% of Louisiana citizens had ever gone to college, and academic proficiency of the state’s 710,000 schoolchildren ranked among the lowest in the nation in every academic area—a reflection, in part, at least, of the staggering number of children living in poverty—

some 207,000, or more than 29% of the state’s 18-and-under population. About half were minority students. By 2000, the state’s efforts to improve public school education had raised student academic achievement from last in the nation to 36th—still far below average, but a notable improvement nonetheless for a state so mired in poverty.

In 1998, the state also approved spending of more than \$1 billion to improve existing four-year colleges and create a system of two-year community colleges to increase the number of skilled workers and attract more business. By the beginning of 2005, the state had supplemented its 16 public four-year colleges with new two-year colleges and lifted the total number of community colleges to 46. The state also had 13 private four-year colleges, including famed Grambling State University and the academically prestigious Tulane University. At the time, however, average graduation rates for the 150,000 students enrolled in four-year colleges were a distressingly low 37% and less than 30% at several state campuses. By the end of 2005, however, the statistics for Louisiana education at all levels were rendered moot by the devastation of Hurricane Katrina, which closed 10 colleges and universities and hundreds of elementary and secondary schools—some never to reopen. Before the public school closed, however, fourth and eighth grade students had participated in the 2005 tests of the NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS. The results were dreadful, with student proficiency ranking among the five worst states in the nation. With 70,000 college and university students displaced and tens of thousands of elementary and secondary school children missing and/or relocated, any statistics gathered before or since are meaningless, because of the vast population shifts.

loyalty oath A publicly sworn affirmation of allegiance to state and/or country, required

in many areas of the United States for teacher certification and employment by public schools. No different from similar oaths required for service as a public official, loyalty oaths for teachers became a center of controversy in 1949, when New York State passed the Feinberg Law. The act required the State Board of Regents to compile a list of organizations it deemed subversive and to disqualify members of such groups from teaching in the state's public schools. The U.S. Supreme Court upheld the constitutionality of the law in *Adler v. Board of Education* in 1952, only to reverse itself 15 years later in *Keyishian v. Board of Regents* by ruling that the law violated First Amendment guarantees of free speech.

The Court also struck down similar laws in other states that applied to civil servants, including teachers. The Court rulings, however, did not strike down the loyalty oath itself, but only the requirements that restrict an individual's right to belong to any organization he chooses. In general, the Court's rulings have affirmed the use of loyalty oaths so long as they remain positive in the sense of the individual's obligations to the state and so long as they avoid all restrictive negatives that detail what oath-takers cannot do.

lyceum Originally, the name of a garden in Athens, with covered walks, where Aristotle taught. The term eventually came to be used as a name for literary institutions and for halls where popular lectures are delivered on a variety of scholarly subjects.

(See AMERICAN LYCEUM.)

Lyon, Mary (1797–1849) American educator, a truly gifted and revered teacher of young women, and the founder of the world's first college for women, Mount Holyoke College, in South Hadley, Massachusetts, on November 8, 1837. Born in poverty on a western Massachusetts farm, Lyon's early education

was that of all farm girls: spinning wool, sewing, making clothes, cooking and similar homestead skills. At 17, she took a job teaching in Shelburne Falls, Massachusetts, for 75 cents a week and free room and board. Living an extremely frugal existence, she saved as much as she could, until she had enough money to attend a term at a nearby private academy. When she ran out of money, she quit, went back to work and saved up enough money to return for another term.

Described as "sturdy, rather uncouth" and poorly dressed, she more than compensated for her lack of manners and taste with her intellect. She mastered the rules of English grammar in four days and Latin grammar in three. She obtained a scholarship to the Byfield Female Seminary, one of only three female secondary schools with educational standards equal to those of boys' academies. Byfield was headed by Reverend JOSEPH EMERSON, who, Lyon would write later, "treated ladies and gentlemen . . . in the same manner and talked to ladies as if they had brains." Emerson also impressed on Lyon the need for better women's education, and after graduating from Byfield in 1814, Lyon spent the next 20 years teaching young women. During that time she helped found two prestigious women's academies, one of them at Ipswich, Massachusetts, with ZILPAH GRANT, a former classmate at Byfield.

Together, the two women built Ipswich into one of the Northeast's most prestigious boarding schools, with a curriculum similar to those of boys' schools. Both were gifted teachers, with Lyon constantly introducing such pedagogical innovations as colored maps, to help students distinguish states and countries more easily. Her innovation led to an oft-recited 19th-century couplet: "Geography was too abstruse; Till Mary Lyon taught its use." Because of the demand to get into the school, Grant and Lyon imposed stiff admission requirements and raised the minimum age for admission to 14. Despite the

restrictions, 1831 saw Ipswich attract 198 enrollees from almost every state, and the two women set out to raise enough money for an endowment to make their popular school a permanent institution. Unfortunately, they failed, because of what Lyon termed, bitterly, "good men's fear of greatness in women." Although it was one of the finest schools of its kind in America, Ipswich eventually closed because of its lack of endowment funds.

Her experience as a teacher and administrator at Ipswich convinced Lyon that no school could survive dependent solely on annual tuition and student fees. She decided to begin

raising funds to underwrite her own school, one that would, for the first time, offer women a college education similar to those offered to men. She went house to house in Ipswich, talking to housewives and mothers who had been deprived of education during their own youth. She urged them to support the cause of education for their own daughters. In an amazing display of solidarity for that era, the women of Ipswich provided Mary Lyon with the first \$1,000 to build Mount Holyoke Female Seminary. Encouraged by her experience, Mary Lyon traveled across the state describing the goals of her new college. She "endured ridicule, fatigue, financial setbacks and staunch refusals" of support from some, but she also received enthusiastic offers to found her future seminary in cities as far west as Detroit. At the same time, influential male friends such as Amherst College President Edward Hitchcock (who supported the cause of women's education and later wrote Lyon's biography) joined the fundraising effort. With their help, Lyon eventually raised \$27,000 over three years, from about 1,800 people in 91 towns. The value of the contributions ranged from two contributions of \$1,000 each to three gifts of six cents each.

Lyon then traveled to a variety of girls' schools to determine how to organize her new college. She found that graduates of the best academies would have no difficulty progressing into college work, but that girls from lesser schools might need as much as a year to catch up. As a result of her trip, Lyon decided to limit the enrollment at her future college to older, more mature and academically motivated students. She also planned to require applicants to take entrance examinations to determine how much each student knew in each of their college preparatory subjects. The exam scores would determine whether to assign each student to a specially designed, initial year of preparatory work or to second-year college-level work.



Mary Lyon, founder of Mount Holyoke College (*Mount Holyoke College*)

The cornerstone of the college was set in October 1836, and a year later Mary Lyon opened the door of America's first women's college. It was an immediate success. By mid-afternoon, 80 young women had arrived by stagecoach and carriage. At the door stood Mary Lyon, "her face all aglow," greeting each student "as a mother would welcome her daughters." One hundred sixteen students enrolled for the following spring term, and by the next autumn the college had to turn away 400 applicants for lack of room. A south wing was then added to the original red-brick, Georgian-style building.

Unlike men's colleges, Lyon's woman's college was, from the beginning, a boarding school. By requiring students to live on campus, she felt the school and its students would remain independent of the influences of local families and townspeople. Determined to serve poor women as well as rich, Lyon kept tuition, room and board to \$64 a year. As low as it was, the fee was too high for many students, and Lyon paid their costs herself if they were academically qualified. To keep costs low, the school had almost no paid staff other than its teachers. Each student—rich or poor—had to do two hours of work each day, sweeping corridors, washing and ironing laundry, washing dishes, baking and taking care of the lawns and gardens. Such work, wrote Lyon, in her *Principles and Design of the Mount Holyoke Female Seminary*, had three purposes: to teach the students equality and break down social and class differences; to teach them self-sufficiency and independence; and "to promote their health, by its furnishing them with a little daily exercise of the best kind."

From its beginnings, Mount Holyoke's tough academic requirements and demanding curriculum assured its students an education equal to that of the finest men's colleges. At first, the school offered only a three-year curriculum to a junior, middle and senior class. Lyon and three resident teachers taught all classes when

the school opened, but two more teachers were added by spring, and visiting lecturers from other colleges came to help. Mary Lyon's old friend and supporter, Edward Hitchcock, came from nearby Amherst College to lecture on human anatomy. He illustrated his talks with a then-remarkable new manikin whose organs could be detached for easier explanations.

Lyon made the curriculum as advanced and as demanding as possible, basing the course catalog on that of nearby Amherst College. Her goal was to make Mount Holyoke, "like our [men's] colleges, so valuable that the rich will be glad to avail themselves of its benefits and so economical that people in very moderate circumstances may be equally and as fully accommodated." Her zeal for improving women's education inspired more than 1,500 of her students to follow her example, by teaching other women and furthering the growth of higher education for women. Many went on to found outstanding women's colleges such as Mills College in California.

In a time when women were refused all access to higher education, Mary Lyon opened a new era for women's education in the United States, and, for her work, she was elected to the Hall of Fame for Great Americans. An astute administrator as well as teacher, Lyon worked as hard to build Mount Holyoke's endowment as she did to build Mount Holyoke itself—to assure that "the buildings and grounds, the library and apparatus . . . (were) permanent contributions to the cause of female education." Mount Holyoke remains one of America's premier colleges—"the oldest continuing institution of higher education for women in the United States." Lyon's original 15 acres have grown to 800 acres, with about 1,850 students and more than 180 faculty. Mary Lyon's first building burned to the ground in 1896, but she lies in a grave near its site, beneath a white marble monument built by her friends and former students.

M

Machlup, Fritz (1902–1983) Austrian-born economist, author and educational philosopher whose seminal 1962 work, *The Production and Distribution of Knowledge in the United States*, radically changed official American policies and public attitudes toward education. Deemed the “father” of educational economics, Machlup was the first to study and delineate the scope and far-reaching effects of the “education industry” and to show that costs of “consumption” of education were far outweighed by the economic benefits education produced for American society. In other words, Machlup proved in absolute dollar terms that education was a capital investment in human resources that produced profitable and continuing American economic growth.

Machlup received his doctorate in economics from the University of Vienna in 1923 and was a successful business executive when he fled Nazism and came to the United States. There he entered the academic world—first at Harvard, then, successively, at the University of Buffalo, Johns Hopkins University, Princeton and New York University. A prolific researcher and writer, he published more than a dozen books on capital formation, international trade and finance, monopoly and competition, the economics of the patent system, and industrial research and development. His crowning achievement was his socioeconomic study of

the knowledge industry and the system society uses to create and distribute knowledge.

Machlup defined the production of knowledge as a two-part phenomenon: one, the creation of new knowledge through discovery, invention, design and planning; and two, the dissemination and communication of existing knowledge to the uneducated and uninformed. He divided knowledge itself into five categories, all related to the individual’s use of that knowledge:

- Practical knowledge that influences the individual’s work, decisions and actions. This category includes all practical knowledge that is useful to professionals, business people, workmen, politicians, householders and others.
- Intellectual knowledge that satisfies the individual’s intellectual curiosity and is “regarded as part of a liberal education, humanistic and scientific learning, general culture . . .”
- Small-talk and pastime knowledge that includes gossip, humor and light entertainment.
- Spiritual knowledge that is “related to [man’s] religious knowledge of God and of the ways to the salvation of the soul.”
- Unwanted knowledge that is acquired accidentally and retained haphazardly, but is of interest economically because of the resources, such as advertising, that are committed to the transmission of such knowledge.

Machlup pointed out that the range of knowledge-producing industries extends far beyond

schools, colleges and universities. It includes jobs, the church, the armed forces, public libraries, museums, research and development agencies, printing and publishing, photography, recordings, stage, screen, lectures, conventions and conferences, radio, television, musical instruments, telephones, telegraph, postal services, information machines such as computers and office equipment and information services (professional services, financial and business services and governmental services).

In 1958, Machlup concluded the United States had spent nearly \$136.5 billion on the production and distribution of knowledge, or 29% of the gross national product for that year. Of that total, about 28% was spent by government, 31% by business and 41% by consumers. About 44% of the total—more than \$60 billion—went into education, 28% into communication media, 13% into information services, 8% into research and development and 6.5% into information machines. The mix has obviously shifted dramatically since 1958, with information machines (computers, etc.) now absorbing a far larger percentage of the total.

Machlup's studies, however, were less important for their statistics for any particular year than for the overwhelming evidence he produced that investments in the production of knowledge and human resource development were directly responsible for economic growth. In effect, he fathered a new field of study, the economics of education, which was quickly absorbed as an essential element of economics generally. His original work was followed by hundreds of studies by government and academe on the economics of education and, ultimately, by a wide range of federal aid-to-education and other new public and private programs to improve education generally and improve job training, education of the poor and education of the handicapped. Even programs such as space exploration, while not directly related to formal education, undoubt-

edly benefited from Machlup's work, which showed all knowledge production as an investment in economic growth.

Macy, Anne Sullivan (1866–1936) American educator and, from 1887, the teacher and constant companion of HELEN KELLER, who had been blind and deaf from the time she was 18 months old. Macy educated Keller by spelling the names of objects into her hands with a manual alphabet. Later, Macy accompanied Keller to schools in New York City and Cambridge, Massachusetts, and attended classes with Keller at Radcliffe College, when Keller enrolled there in 1900. Macy spelled college lectures into Keller's hand and read course assignments to her for as many as six hours a day.

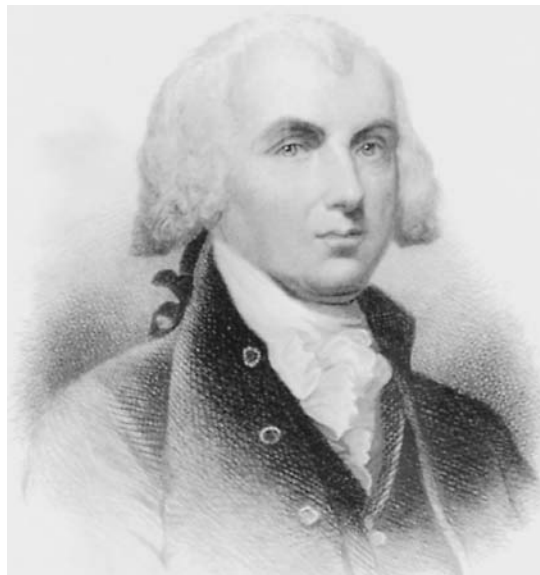
Born in Massachusetts, Macy was herself nearly blind from a childhood illness. Orphaned at eight after her mother died and her father deserted the surviving children, she and her brother were placed in a state almshouse, where her brother died. She eventually was educated at the Perkins Institution for the Blind in Boston and was operated on several times to save what little vision she had. In later life, she and Keller lectured throughout the United States, raised funds for blind veterans and assisted the American Foundation for the Blind. Her unsuccessful marriage to author John Macy, who had edited Keller's autobiography, ended in 1913, after eight years. Macy went blind in 1935 and died a year later.

Madison, James (1751–1836) Fourth president of the United States and, with George Washington, John Adams, THOMAS JEFFERSON, BENJAMIN FRANKLIN and others, an early advocate of universal education as essential for a self-governing people. "Knowledge will forever govern ignorance: And a people who mean to be their own Governors," he wrote, "must arm themselves with the power which knowledge gives."

To that end, Madison attempted to persuade the Continental Congress to empower Congress to establish a national university. Madison was also the most outspoken supporter of Jefferson's scheme to establish a national system of universal education, consisting of public primary schools in each community; quasi-public grammar, or secondary, schools for each county; publicly controlled colleges in each state; a national university and a national public reference library. Students were to progress to each level on the basis of competitive examinations, and graduation from the national university would be required for government service. The schools were to be secular in every respect at all levels to assure total separation of church and state. Families would be charged according to their wealth, with the poorest children admitted free.

Although Madison and his allies succeeded in obtaining passage of the Bill of Rights, their effort to ensure universal education was rejected by a coalition of industrialists and plantation owners who depended on child labor in the North and slave labor in the South. Both groups feared that mandatory schooling would deprive them of cheap labor and possibly stir unrest in the laboring class.

Born to a moderately wealthy family of Virginia planters, Madison was educated at home prior to his enrollment at the College of New Jersey (later Princeton), where he graduated in 1771. Elected to the Virginia constitutional convention in 1776, he fought alongside Jefferson for establishment of complete freedom of religion. In 1776, he joined others from the College of New Jersey in founding Hampden-Sydney College to bring Princeton-style higher education to Virginia. Later, he was a dominant figure at the Constitutional Convention and was responsible for many of the compromises that resulted in ratification. Much of his philosophy of government as expressed in his essays in the *Federalist Papers* was enshrined in the Constitu-



James Madison (Library of Congress)

tion. When Jefferson was elected to the presidency in 1800, Madison served as his secretary of state, as well as close friend, confidant and political ally, for eight years. He was the logical choice to succeed Jefferson to the White House, and, like his predecessor, he served two terms. He retired to his home in Virginia in 1817. When Jefferson died in 1826, Madison succeeded him as rector at the University of Virginia until his own death 10 years later.

magazines In education, periodicals designed for students of all ages for use in and out of the classroom. For beginning readers, carefully chosen comic books not only entertain children, they also provide frame-by-frame stories with picture cues that are less intimidating for some children than prose uninterrupted by any illustrations. A wide variety of special interest magazines for children and young adults are available, including periodicals on sports, wildlife, hobbies, social studies and geography, science, history, literature, games, fashions and

social problems. Some also offer students the opportunity to submit original articles, stories and poems.

Although the majority of publishers sell directly to subscribers, a few offer magazines tied to classroom studies and sell their products exclusively through schools. Although each student is required to pay for his or her individual subscription, only teachers may order such publications, which are then used in conjunction with the curriculum—often tying current events with studies of history, social studies, science, etc.

magic square A square in which numbers are arranged in rows and columns so that the sum of numbers in each row, column and diagonal is always the same. Magic squares date back at least 3,000 years to ancient China and continue to be used in some mathematics classes as a pedagogical tool to teach students the relationships between numbers, specifically, that a variety of numbers can add up to the same total. Magic squares also help students develop quickness in calculating.

Thus, the total of each column, row and diagonal in this magic square

16	3	2	13
5	10	11	8
9	6	7	12
4	15	14	1

is 34. The square as presented would serve as a lesson in addition. But it can also serve as a lesson in mathematical reasoning and subtraction if presented with several missing numbers:

16		2	13
	10	11	
	6	7	12
4			1

magnet school A selective, academically demanding public elementary or secondary

school with superior facilities and programs open only to qualified students. Usually reserved for gifted students, magnet schools may be specialized or unspecialized. Thus, New York City's Stuyvesant High School offers a broad liberal arts education for the academically GIFTED, while the Bronx High School of Science and La Guardia High School (formerly the High School of Music and Art)—both also in New York—offer curricula that focus on specific areas, although all students are exposed to an adequate number of courses in English, history and other core subjects from the standard high school curriculum. Magnet schools offer no nonacademic subjects such as health or home economics. By definition, a magnet school attracts students from all school districts and is open to all students who pass qualifying entrance examinations or, in the case of schools of music and art, have successful auditions or present acceptable portfolios. Magnet schools in some states with widely scattered rural populations have boarding facilities that permit students from all parts of the state to attend. Magnet boarding schools usually limit enrollment to juniors and seniors who are mature enough to live away from home for long periods of time.

The North Carolina School for Science and Mathematics, in Durham, was the first such state-financed magnet boarding school. Like other, similar facilities, it is located near a thriving university and industrial research area where the school can take advantage of skilled mentors and where students can avail themselves of advanced study and research facilities. Founded in 1980, it became a model for similar schools in many other states. By the mid-1990s, nine other states had established similar RESIDENTIAL ACADEMIES, and other states were in the process of establishing them.

Massachusetts developed a new approach, midway between the boarding school concept and the day school, which can accommodate

students only from a limited area within commuting distance and ignores students from the rest of the state. The state's plan calls for the establishment of day magnet schools around the state, using existing college and university facilities, and turning over the operation of such schools to the colleges themselves. The plan's first contract was awarded in 1994 to Worcester Polytechnic Institute, a four-year science and engineering college in central Massachusetts. The fee paid to the institute for each high school student was within 10% of the average per capita cost of educating all public school students statewide.

Fewer than 5% of American public schools are true magnet schools, but, because they attract the most gifted students and teachers, they have been the target of critics who contend they represent a form of elitist TRACKING at public expense. With smaller class sizes, sophisticated equipment, the cost of competing with industry to lure expert teachers and, in the case of boarding schools, the cost of room and board, the expense of educating students at magnet schools can range as high as \$15,000 a year per student—four times the cost of educating a student in the average American public high school. Moreover, by skimming off the best students, critics charge, magnet schools lower the educational quality of traditional high schools and reduce per capita-based state aid to the standard schools. Funds used for building and maintaining magnet schools, they say, would be better spent providing all children of the state with better math and science education.

Supporters of magnet-school education maintain that magnet schools represent the only publicly supported education for gifted students who would otherwise be ignored in conventional public schools with few or no facilities or programs for the gifted. Magnet schools are especially important, say supporters, for gifted minority students who would

otherwise languish in substandard schools in city slums or backward rural communities. Moreover, the low school budgets and low education quality of schools in rural states such as North Carolina make it impossible to produce the kind of literate, highly trained and skilled work force needed to lure new industry.

In founding its magnet boarding schools, North Carolina sought to transform a then backward, agrarian and blue-collar economy into a scientific and technological economy. Without a mathematically and scientifically literate work force—at the time, the state's public schools ranked among the lowest in the United States according to every measure of educational quality—the state was unable to lure technologically advanced industries. And the state's primary industries at the time were unable to generate the kind of tax revenues needed to give every public school the laboratories and trained teachers they needed to improve science and math education. So state officials decided to concentrate their meager resources on a single state school. The investment paid off handsomely. Of the more than 1,400 students who graduated during the program's first 10 years of operation, 99% went on to four-year colleges, with 67% majoring in mathematics or science.

For the United States as a whole, only about 40% of the top 10% of high school graduates become science or mathematics majors, and only 18% of all high school graduates become science or mathematics majors. Just as significant, 70% of the North Carolina school's nonwhite minority students (22% of the school's graduates) went on to major in math, science or technologically related subjects at college. Nationally, less than 12% of nonwhite high school graduates select science or mathematics majors.

Maine The 23rd state admitted to the Union, in 1820. Although first settled in 1624, it

remained a part of Massachusetts until its population and economy grew to levels that warranted independence. Although schools were established in the early 18th century, the first public schools did not appear until 1828. The academic proficiency of Maine's more than 200,000 public school students ranks among the highest in the nation: Fourth graders rank eighth in the nation in both math and reading proficiency, and eighth graders rank second in math proficiency, although they rank only 24th in reading proficiency. The state has about 700 public schools, where minorities make up less than 4% of enrollment, but 11% live in poverty. Maine has 30 institutions of higher education, including the seven-campus University of Maine. The state has 12 private four-year institutions—among them such academically demanding colleges as Colby, Bates and Bowdoin. Maine also has 10 two-year colleges, seven of them public and three private. The collective graduation rate for the 50,000 undergraduates at four-year colleges is 57.5%.

mainstreaming The enrollment in conventional classrooms of exceptional students with special needs. Now mandated by federal law, mainstreaming requires school districts and schools to educate physically, emotionally, behaviorally and intellectually handicapped children in the least restrictive environment possible. Until 1975, an estimated eight million handicapped American children were excluded from public schools because of such handicaps. Many were institutionalized; others forced to remain at home. In 1975, Congress passed the landmark Education for All Handicapped Children Act after a series of televised reports exposed unconscionably cruel conditions in mental institutions. Amended in 1983 and 1986, the law forced all U.S. public schools to guarantee handicapped children free and appropriate public school education. The law provided federal funds to states and local dis-

tricts for three primary purposes: to make schools barrier-free and accessible to handicapped students, faculty and staff; to staff such schools with support personnel to work with students, parents and teachers; and, through the development of an INDIVIDUAL EDUCATION PROGRAM, to provide special instruction for handicapped students.

The theory underlying mainstreaming is that even the most handicapped children can benefit intellectually and socially by attending class with normal and gifted children. The latter, in turn, can benefit by learning tolerance and appreciation of others who may be different from them. Mainstreaming has achieved both goals, according to innumerable studies, but it has also had disadvantages, including classroom disruptions that interfere with normal teaching routines for nonhandicapped students. In addition, "full inclusion," as mainstreaming is sometimes called, has also meant the stationing of supplementary personnel in classrooms to interpret for or provide special instruction to handicapped students while the rest of the class attempts to proceed with its normal routine.

In addition to classroom disruptions, critics of mainstreaming have raised objections to the costs of plant reconstruction to create barrier-free campuses; such costs can run to hundreds of thousands of dollars, often to benefit only a very few handicapped students.

major, minor Courses of concentrated, specialized study at college. Depending on the college, students normally begin specializing, or majoring, in one subject or subject group during their third, or junior, year and continue through their last, or senior, year. During that time, they must complete a minimum number of courses in that subject or subject group to earn their degrees and graduate. The number varies from college to college but in general ranges between 10 and 14 courses at colleges requiring 36 courses for graduation. Many col-

leges also require a senior seminar or thesis in each major to demonstrate the depth of each student's knowledge. Designed to encourage students to explore the limits of knowledge in a particular subject, the major often requires studies in one or more related fields. Such secondary studies are, at some colleges, called a minor and usually involve far fewer courses than the major. Thus one might major in psychology and minor in sociology or major in American history and minor in political science or vice versa.

The term "major" is sometimes used in secondary schools, usually to "dress up" studies in the general or vocational track, as in a "business major" (clerical training).

Man: A Course of Study (MACOS) A controversial middle-school course developed by the Educational Development Center of Newton, Massachusetts, with a grant of nearly \$5 million from the NATIONAL SCIENCE FOUNDATION. Sold by EDC to about 500 public school districts in 1969, the program consisted of booklets and audiovisual materials that ostensibly explained all aspects of man as a complex species, but, in the course of so doing, touched on various forms of primitive human behavior that religious groups and other critics found abhorrent. MACOS also represented the first direct, federal government intervention in the preparation of required curricular materials in public schools—another aspect of the program that critics found objectionable. Indeed, because of MACOS, Congress legislated a ban on any National Science Foundation involvement in the promotion or marketing of instructional materials for public schools.

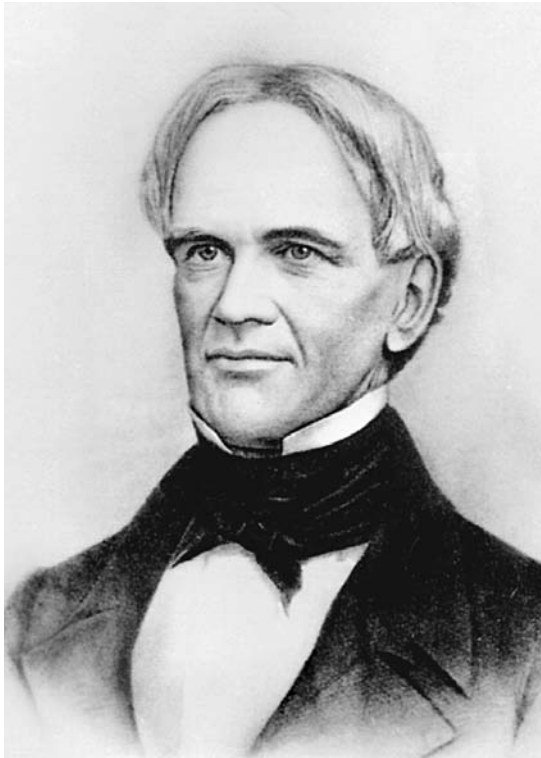
Mann, Horace (1796–1859) Educator, legislator, attorney and generally recognized as the "father of public education" in the United States. Born in Franklin, Massachusetts, the son of a poor, Minuteman patriot farmer, Mann

educated himself by reading all the books in the town's library. At 20, an itinerant teacher instructed him in Latin and Greek, thus permitting him to take entrance examinations at Brown University, where he enrolled as a sophomore and eventually graduated valedictorian of his class. After two years as a tutor at Brown, he went to Litchfield Law School and, after being admitted to the bar, practiced for 10 years in Dedham, Massachusetts, which named him town orator and elected him to the state legislature. There, he set out on a career of radical social reforms, eventually leading the fight to disestablish the church as the state's official religion. He was responsible for building the nation's first hospital for the insane and transferring them from prison cells for medical treatment. He was also responsible for ending public hangings in Massachusetts, for ending the practice of indefinite prison sentences for debtors and for reforming the penal code to make punishments fit the crime. At the time, "hanging judges" often sentenced petty thieves to death by hanging.

In 1837, Mann convinced the legislature to establish a state board of education to build the nation's first public school system, and the governor promptly named Mann to head the board. Although he had few direct powers, he toured the state endlessly, traveling from town to town using his oratorical skills to convince community after community to establish free public schools. In every town he met—and overcame—strong opposition to public schools from churchmen, industrialists and parents. The church feared secular schools would strip them of control over children's minds; mill owners feared education would strip them of their cheapest labor, children; and parents feared a loss of family income if their children went to school instead of working in the mills or fields.

In the end, Mann convinced parents that education would allow their children to earn

more; he convinced mill owners that an educated work force would be more efficient and productive and mean more earnings for their companies; and he convinced the majority of the rest of the people of Massachusetts that the survival of democracy and self-government depended on an educated electorate. Appealing to people's love of country, he warned that the nation, which had been founded by educated men, would not survive if it failed to send its children to school. "If we do not prepare children to become good citizens," he declared, "if we do not enrich their minds with knowledge, imbue their hearts with love of truth and duty . . . then our republic must go down to destruction . . . as others have gone before it."



Horace Mann (Antiochana Collection, Antioch College)

Gradually, town by town, he won popular support for establishment of free public schools and the hiring of trained teachers. The result was the nation's first statewide public school system. It was secular, professionally operated and dedicated to training young citizens for democracy. More than \$2 million were spent to build the system, which included 50 high schools. In passing the first law making education compulsory for all children, the state legislature extended the school year to a minimum of six months—the first minimum school-year law in the United States.

To provide more and better teachers, Mann obtained funds to build the nation's first teacher training college, established in Lexington in 1839. It immediately became the center of national and even international attention; because of their training and professionalism, Lexington's graduates commanded salaries 50% to 100% higher than those paid to other teachers. The following year, Mann toured his state a second time, convincing more communities to establish public schools. He raised enough money to start three more teachers colleges, and he founded the *Common Schools Journal*, which he sent to teachers across the United States. In addition to news about education, the *Journal* published sample lessons and methods for teaching geography, drawing, spelling and other subjects. Through the *Journal*, Mann pioneered new educational ideas: the grading of children's work, for example, and midmorning recess for children under eight.

Internationally known as "the High Priest of Education," Mann traveled to other states to spread his educational gospel. In the end, Mann helped spawn public school systems in Rhode Island, Connecticut, New York and almost every other Northern state. In 1848, former president John Quincy Adams died during his ninth term in the House of Representatives. Mann was named to serve the unexpired term of his old friend and in 1850 was elected to



Antioch College opened in Ohio in 1853 with Horace Mann as founding president. (*Antiochana Collection, Antioch College*)

serve a full term in Washington. His unsuccessful fight to block passage of the Fugitive Slave Laws so discouraged him that he gladly accepted an invitation from the founders of Antioch College in Ohio to move west in 1852, with his wife and children, and become that institution's founding president. Under his leadership, Antioch became the first college in the United States to admit all qualified students—without regard to wealth, gender, race, creed or ethnic background. At its first commencement in 1857, Antioch graduated 16 seniors, four of whom were women.

Under Mann, Antioch pioneered every new concept in education. It was the first college to

hire a woman professor (Mann's niece Rebecca) and the first to introduce student government. Mann also established an honor system, which put students "on their honor" not to cheat. Unlike most colleges, where teachers and students kept their distance from each other, Antioch encouraged close and friendly faculty-student ties. Antioch's teachers became the first college teachers to serve as student advisors, counselors and mentors, as well as lecturers.

Six years after Antioch's founding, Mann died. Two months earlier, as if aware of his impending death, he had issued this stirring call to Antioch's third graduating class: "I beseech you to treasure up in your hearts these

my parting words: Be afraid to die until you have won some victory for humanity."

Mann, Mary Tyler Peabody (1806–1887)

Educator, author and biographer of her husband, educator HORACE MANN. In 1836, Mary and her sister, Elizabeth Peabody, founded and operated one of the first private schools in Boston to admit girls as well as boys. It was in that year that the two sisters first met and became enthralled by Horace Mann and his espousal of free, universal public education. With missionary zeal, they joined his campaign, traveling to communities throughout Massachusetts to preach the necessity of universal public education if democracy were to survive. Mary Peabody married Mann in 1843, and they spent their honeymoon in Europe, visiting schools and studying teaching methods in England, Scotland, Germany and Holland. They borrowed the newest and best ideas they could find and brought them home to America.

Mary remained Horace Mann's lifelong companion and coworker, writing the *Common School Journal* for him and eventually writing the massive three-volume *Life and Works of Horace Mann* (1865–68). They had three sons, two of whom became scientists and the third a high school principal. After Mann's death in 1859, his wife returned to teaching, rejoining her sister, who had opened one of the nation's first kindergartens in Boston. In 1863, the two sisters published *Moral Culture of Infancy, and Kindergarten Guide*, in which Mary wrote of the importance of love in teaching young children. She denied the existence of original sin, insisting that children were innately good and that education should elicit and nurture certain "faculties" within the child instead of implanting facts by means of rote recitation. From 1873 to 1875, she also helped her sister edit the then-definitive periodical *Kindergarten Messenger*.

Manpower Development and Training Act of 1962 (MDTA)

A legislative element of the WAR ON POVERTY that established occupational training and retraining programs for the unemployed. The act called on the government—specifically the Departments of Labor and of Health, Education and Welfare—"to appraise the manpower requirements and resources of the Nation and to develop and apply the information and methods needed to deal with the problem of unemployment resulting from automation and technological changes and other types of persistent unemployment." In 1963, the act was amended to add occupational training for disadvantaged youths and other unemployed persons to give them marketable skills.

The program had little noticeable effect in reducing hard-core unemployment. Many that were awarded funds to train the poor took advantage of the lack of government oversight to retrain skilled, albeit unemployed, workers instead of the unskilled ones. In 1982, MDTA was subsumed into a new Job Training Partnership program designed to eliminate such scandals and focus on the hard-core unemployed. Nevertheless, the scandals continued. In 1988, for example, one automotive plant used \$8 million in Job Partnership funds to fly a group of workers to Japan for special training and to teach Japanese instructors enough English to train the workers.

manual alphabet The representation of each letter of the alphabet by a specific configuration of the fingers and hand. The manual alphabet is used to "FINGER SPELL" words for the deaf. Unlike SIGNING, which uses hand and finger configurations to represent whole words, finger spelling requires the spelling out of each word. Although slower than sign language, it is more accurate, and experienced finger spellers can spell at a rate of as many as 60 words a minute. When combined with some speech

(the Rochester Method), the system becomes even faster.

(See also KELLER, HELEN; MACY, ANNE SULLIVAN.)

manual training Instruction in the use of industrial tools and equipment in arts and crafts and in handwork skills. The predecessor of modern vocational education, manual training originated in 1868 at Russia's Moscow Imperial Technical School whose director, Victor Della Vos, had developed an entirely new pedagogical approach to industrial education. He and his colleagues had analyzed the skills required for each basic craft and trade and organized them in order of ascending difficulty so that they could then be taught to students in that order. Using drawings, models and tools, teachers at the institute taught each trade, step by step, putting students through a series of graded exercises until they arrived at a basic skill level that would allow them to enter apprenticeships.

The Della Vos method of manual training was first displayed abroad in the Russian exhibit at the Philadelphia Centennial Exposition in 1876. At the time, American educators had been searching for ways to introduce vocational education into the school curriculum to help prepare students for the industrial age. The two leaders of the vocational education movement were MASSACHUSETTS INSTITUTE OF TECHNOLOGY president John D. Runkle and Washington University professor Calvin M. Woodward. Both found in the Della Vos exhibit "the philosophical key to all industrial education," and they became the chief proponents of the new branch of education called "manual training."

Urging its introduction into every high school curriculum, they envisioned the Della Vos system as a means of enabling schools to meet the changing needs of an industrial society. They also saw it as a way of making schools

more attractive to the huge number of children of immigrant laborers arriving in the United States whose educational ambitions, or lack thereof, pointed them toward skilled trades and immediate, paying jobs rather than a long, extended period of study in an academy or university. In 1880, St. Louis public high schools were first to respond, and, four years later, the first schools devoted exclusively to manual training appeared. The term manual training began to disappear in the 1930s, as vocational schools extended their curricula beyond individual crafts, such as woodworking and metalwork, to industrial instruction requiring multiple skills as in the aviation and automotive trades.

manumission The freeing, or emancipation, of slaves from servitude. Derived from the Latin *manumittere* (*manus*, "hand," + *mittere*, "release"), the term was widely used during the era of slavery in the United States, when hosts of manumission societies were formed to abolish slavery and, short of that, to encourage slaves to flee to free territories. The first manumission society was organized by Quakers in 1775, and in 1780 Pennsylvania became the first state to abolish slavery. Connecticut and Rhode Island followed suit in 1784, New York the following year, and New Jersey in 1786. The Northwest Territory abolished slavery in 1787.

The New York Society for Promotion of Manumission, with future chief justice John Jay as founding president, was responsible not only for abolishing slavery in New York State, but also for establishing a group of free schools for African Americans in New York City; the society made education of runaway slaves and black freedmen its primary responsibility. Although Massachusetts never formally abolished slavery by law, its constitution of 1780 declared that "all men are born free and equal," and the Massachusetts courts ruled that clause as having effectively legislated manumission.

marker board See DRY-ERASE BOARD.

marking systems Any of a variety of graded scales to assess and rank the academic achievement of students. Marking systems may be broad-based—e.g., “unsatisfactory,” “satisfactory,” “good,” “excellent”—or specific, with work ranked exactly on a percentage scale of 0 to 100, with 50 or 60 usually the minimum passing grade. The two most common marking systems are letter grades (A, B, C, etc.) and grade points, which range from 0 to 4.0. In addition to assessing the quality of a student’s work, effective marking systems serve at least four other purposes: They instruct and motivate students; they keep parents apprised of their children’s progress; they provide guidance for the teacher in fashioning future instruction; and they provide school administrators with the data needed for placement and promotion of students.

Marking systems may be either absolute or norm-based. The former system bases grades strictly on the mathematical relationship between right and wrong answers—regardless of how many students pass or fail a particular test. Thus, if 10 out of 10 students in a class answered only 10% to 40% of the questions on a test correctly, the entire class would fail. A norm-based marking system, on the other hand, would inflate or deflate student scores on every examination to match the normal distribution of student grades as represented by a bell-shaped “curve” on a graph. Thus, the majority of student grades normally fall in the C+ to C- range, with decreasing numbers of students obtaining grades ranging as high as A+ and as low as F. In the aforementioned test, students with “failing” grades of 25% would nevertheless receive a passing grade of C, with those scoring 40% correct answers getting Bs or even As, and only those with 10% correct answers getting a failing grade.

(See also GRADE; GRADE INFLATION; GRADE POINT.)

Marshall, Thurgood (1908–1993) American jurist and attorney responsible for winning the landmark *BROWN V. BOARD OF EDUCATION OF TOPEKA* case that ended racial segregation in the United States. Eventually named the first black justice on the U.S. Supreme Court, Marshall was born in Baltimore, the great-grandson of a slave. He worked his way through all-black Lincoln University in Pennsylvania, graduated cum laude in 1930 and earned his law degree magna cum laude at the similarly uniraical Howard University in Washington in 1933.

As a private practitioner in Baltimore, he successfully argued several civil rights cases for the local branch of the National Association for the Advancement of Colored People, and in 1938 he was named special counsel for the NAACP. Two years later he was named head of



Thurgood Marshall (Library of Congress)

its legal services division and began a brilliant, carefully plotted 23-year legal campaign that overturned racially discriminatory laws and practices in almost every state and brought an end to racial segregation in schools and other places of public accommodation. Over the years, he argued 32 major cases, winning 29 of them and setting major constitutional precedents in five of them. In *Smith v. Allwright* (1944) he secured black voting rights in Texas primary elections. In *Morgan v. Virginia* (1946) he won a ruling that declared segregated seating on interstate buses unconstitutional. In *Shelley v. Kraemer* (1946) he won a ruling that declared state implementation of segregated housing agreements unconstitutional. In *Sweatt v. Painter* (1950) he won admission for a qualified black law student to the University of Texas law school, which had denied entry to the student because of his race.

In 1954 he won one of the most far-reaching legal cases in United States history—*Brown v. Board of Education of Topeka*—which reversed an 1896 Supreme Court ruling in *Plessy v. Ferguson* and ended racial segregation in American public schools. The earlier ruling had declared “separate but equal” public accommodations for different races to be constitutional, but Marshall convinced the High Court that segregated public schools were inherently unequal and, therefore, a denial of FOURTEENTH AMENDMENT rights to African-American students. Later appointed to the U.S. Court of Appeals, Marshall was named to the U.S. Supreme Court by President Lyndon B. Johnson in 1967.

Marxism In United States education, a short-lived movement in the 1930s dedicated to converting American public schools into vehicles for radical social change. Also known as “frontier thinkers,” proponents of educational Marxism saw American public schools as instruments of American industry to turn impressionable youngsters into passive, obedient workers in

the capitalist system. The leaders of the Marxist educational movement, however, were few in number and mostly college- and university-level academics. Although their views produced considerable debate among educational theorists, they had little effect or influence on the workaday world of schoolteachers and administrators concerned with such mundane issues as student misbehavior and school budgets. Their failure to have any impact on American education during a period of social and economic crisis was based largely on their misperception of American education as a “national system.” In fact, the American education “system” was made up of about 100,000 school districts, more than 1,000 colleges and nearly 200,000 churches and synagogues—all acting independently of each other. There was, in other words, no “national” educational policy, and the federal government had almost no influence on education. Their efforts to change national policy, therefore, proved pointless.

Maryland Seventh of the original 13 states, originally granted (with Delaware) to George Calvert, first baron Baltimore, by Charles I, king of England, in 1632. Lord Baltimore named the colony after Charles’s queen consort, Henrietta Maria. In principle, it remained a proprietary colony until the death of the fifth Lord Baltimore in 1751. Although a slaveholding state, it adhered to the Union during the Civil War. The first free school, King William’s School, opened in Annapolis in 1696, but it was not until 1826 that Maryland established any other public schools. The academic proficiency of the more than 860,000 students in Maryland’s 1385 public schools was average for the United States. About 47.5% of Maryland’s school children were minority children, and only 7% lived in poverty. Maryland has 63 institutions of higher education—14 public and 28 private four-year schools and 16 public and five private two-year colleges. Among the

private four-year colleges were Washington College, Hood College, St. Johns College (known for its GREAT BOOKS PROGRAM) and JOHNS HOPKINS UNIVERSITY, which boasts a world-renowned medical research institution. Collectively, the state's 130,000 four-year college undergraduates have a 61.5% graduation rate—well above the national average.

mascot An animal, person or object adopted by a school, school team or any other group as a symbolic figure. The word is derived from the French *mascotte*, or charm, designed to ward off evil. Peculiar to American education, the origin of the widespread use of mascots in academe is obscure, although Yale University archivists claim the practice may have begun in the late 19th century when Yale's football coach brought his pet English bulldog, Handsome Dan, to the field for practices and games. Then a national football power, Yale's team eventually adopted the bulldog as its mascot. Mascots, or school nicknames, run the gamut from native animals, as with the Arkansas Razorbacks (a type of hog); to professions, as with the Lehigh Engineers (originally named for railroad workers); and even to puns, as in the University of Connecticut—U. Conn (Yukon)—Huskies. Some names are pure invention, the most famous being the Georgetown University Hoyas, which is said to derive from the mixed Greek and Latin phrase "*hoya saxa*," meaning "What rocks!"—alluding, obscurely enough, to an earlier Georgetown team dubbed the "Stonewalls." In recent years, many colleges have abandoned names and mascots such as the St. John's Redmen and Dartmouth Indians, which were deemed to be racially insensitive.

Maslow, Abraham H. (1908–1970) American psychologist whose theory of human motivation, based on a "hierarchy of needs," was widely studied by educators in an effort to formulate classroom procedures. First pub-

lished in 1954, Maslow's theory maintained that humans had five sets of basic needs, arranged in order of priority, or "hierarchy," and that humans would not or could not fulfill the needs of any level until the needs of lower levels were met. He labeled the two lowest sets of needs physiological (food, water, sleep, etc.) and safety. Until these two sets of needs were met, Maslow theorized, humans would be unmotivated to satisfy higher order needs. The next levels of needs were, respectively, love, or affiliation, needs; esteem needs such as achievement, adequacy, prestige or status; and self-actualization, which Maslow defined as the need "to become everything that one is capable of becoming. What a man can be, he must be."

Although subsequently disproved in many respects, Maslow's theories produced a number of important changes in school and classroom operations. For one thing, schools across the United States sought to assure that students had proper breakfasts and were well fed before beginning their daily lessons. Where budgets permitted, many schools also reduced the number of students in each class to produce a sense of intimate "belongingness."

Mason, Lowell (1792–1872) American music educator, composer and generally known as the "father of American music education." Believed to have been the first teacher of music in American public schools, Mason was born in Massachusetts, and, after displaying exceptional musical talents during his youth, he began giving solo vocal and instrumental performances and composing church music. His most famous hymns are *Nearer, My God, to Thee*, *From Greenland's Icy Mountains* and *My Faith Looks Up to Thee*. In 1833 he helped found the Boston Academy of Music, which offered vocal and musical instruction and sought to introduce musical instruction into Boston's public schools. A year later, he devised a sys-

tem of musical instruction for children based on methods developed by JOHANN HEINRICH PESTALOZZI, and in 1838 he began using his system to teach music in Boston public schools. By the end of that school year, he had been appointed superintendent of music and had introduced music instruction to the entire Boston public school system—the first such public-school music program in the United States. Mason later taught music to blind students and became a national spokesman for music education.

Massachusetts The sixth of the original 13 colonies and site of the first public school, the first public high school and the first college in the New World. The leaders of the Massachusetts Bay Colony, as it was first known, made education a top priority from the beginning. The first public school in the colonies, BOSTON LATIN SCHOOL, opened in 1635. Ipswich and Charlestown each opened a GRAMMAR SCHOOL the following year—the same year that HARVARD COLLEGE opened its door in Cambridge. Dorchester established its first school in 1639, and by 1647 at least nine educational institutions were operating in Massachusetts.

To ensure that the rest of the towns in Massachusetts followed suit, the general court, or colonial legislature, enacted the first educational legislation in the Americas, known as the MASSACHUSETTS LAWS OF 1642 AND 1647. The two laws would influence educational history throughout New England for the remainder of the colonial period and well after independence. Connecticut enacted a similar law in 1650, the Plymouth Colony followed suit in 1677, and the rest of New England (including New York) did the same by the end of the century. Massachusetts remained a cradle of education throughout the 18th and 19th centuries. The first public high school in the United States, English Classical High School, opened in Boston in 1821, and HORACE MANN estab-

lished the nation's first state public school system and first teachers college in Massachusetts during the late 1830s. In 1852, Massachusetts became the first state to make public school attendance compulsory for all children.

In 2007, Massachusetts had by far the finest public school system in the nation, with more than 1,900 elementary and secondary schools and a combined enrollment of about 975,000—nearly 25% of them minority students. More than 11% of the state's schoolchildren live in poverty, but the academic proficiency of Massachusetts children ranked them highest in the nation in all subject areas—first in reading proficiency and in math at all grade levels—and, in percentage terms, well ahead of students in the states ranked second. Forty-five to 50 percent of students score at or above proficient levels in all subjects—again, the highest in the nation by far. About 140,000 additional students, many of them from out of state, attend the state's 700 private schools; some of them, such as PHILLIPS ACADEMY, are renowned for their exceptionally high academic standards and count among their alumni world-famous leaders, including President George W. Bush.

More than 430,000 students attend the state's 122 institutions of higher learning, of which the majority, 79, are private, four-year schools. These 79 include many of the world's most distinguished colleges and universities, including AMHERST COLLEGE, CLARK UNIVERSITY, HARVARD UNIVERSITY, MASSACHUSETTS INSTITUTE OF TECHNOLOGY, MOUNT HOLYOKE COLLEGE, SMITH COLLEGE and Wellesley College. The state's 15 public four-year institutions include the University of Massachusetts, with campuses at Amherst and Boston. The graduation rate of the 350,000 students enrolled at four-year colleges is 65.6%. There are also 29 two-year colleges in Massachusetts, 16 of them public.

Massachusetts Institute of Technology (MIT) One of the world's premier research

universities, founded in Cambridge by American geologist William Barton Rogers (1804–82) in 1861 as the first school devoted to industrial science. It was one of the first colleges to use the laboratory method of instruction, and it was responsible for developing the modern fields of chemical engineering and applied physics. MIT eventually developed into five schools: science, engineering, architecture, (business) management, and humanities and social sciences. In 2000, MIT had a total enrollment of just under 4,400 undergraduate and about 5,500 graduate students.

Massachusetts Laws of 1642 and 1647

The first educational legislation enacted in the Americas. Enacted by the Massachusetts General Court, or legislature of the Massachusetts Bay Colony, the 1642 law was the first compulsory education law in the Americas. It required officials of each town to inspect schools and homes to ensure that children were being taught “to read and understand the principles of religion and the capital laws of the country.” Officials who failed to comply with the law were subject to fines.

The more far-reaching and more famous law of 1647—often called “The Old Deluder Satan Act”—was the first to require universal public education. The law required every town of 50 or more families to hire a teacher of reading and writing. Towns of 100 families or more were required to establish grammar schools and hire a Latin master to prepare boys for college.

Here is the wording of the first school law in North America:

It being one chief project of that old deluder, Satan, to keep men from the knowledge of the Scriptures, as in former times, by keeping them in an unknown tongue, so in these latter times by persuading them from the use of tongues, that so at least the true sense and

meaning of the original might be clouded by false glosses of saint-seeming deceivers, that learning may not be buried in the grave of our fathers in the church and commonwealth, the Lord assisting our endeavors,

It is therefore ordered, that every township in this jurisdiction, after the Lord hath increased them to the number of fifty householders, shall forthwith appoint one within their town to teach all such children as shall resort to him to write and read, whose wages shall be paid either by the parents or masters of such children, or by the inhabitants in general, by way of supply, as the major part of those that order the prudentials of the town shall appoint; provided, those that send their children be not oppressed by paying much more than they can have them taught for in other towns; and it is further ordered, that where any town shall increase to the number of one hundred families or householders, they shall set up a grammar school, the master thereof being able to instruct youth so far as they may be fitted for the university, provided, that if any town neglect the performance hereof above one year, that every such town shall pay five pounds to the next school till they shall perform this order.

master In education, an all-but-archaic term for a male teacher. Dating back to medieval universities, masters traditionally held academic degrees higher than bachelors but lower than doctors. The term, along with headmaster, or principal, was traditionally used through the first half of the 20th century in English schools and universities and in American private schools that based their programs on comparable English schools. Although female principals of private schools carried the title *headmistress*, female teachers were simply called *teacher* or *instructress*, but never *mistress*. Until 1945, “master” was also a title for boys too young to be addressed as “mister”—usually boys under 18 from land-owning but not noble families.

master class A seminar for advanced music students, led by a master musician, usually with some renown. In a typical master class, the master works with and coaches students individually on stage before a passive audience of other students and teachers. Masters teach according to their own schedule or, in some cases, whim, spending much or little time with each student, sometimes devoting their entire class to one student and sometimes teaching a number of students, one at a time. The master class technique can—and is—sometimes applied to other areas of the performing arts and, less frequently, to the fine arts.

Master of Arts in Teaching (MAT) A special degree developed after World War II to ease teacher shortages by offering professional teacher training to college graduates who had not studied education as undergraduates. The MAT program required one year's study of courses in education and in the subject the candidate expected to teach, followed by an internship or equivalent field experience.

master's degree A graduate degree normally requiring one year of study beyond the work for a BACHELOR'S DEGREE in a particular subject (for example, American history or English literature) or field (such as modern languages or education). Although a bachelor's degree is usually required for admission into a master's degree program, some universities permit simultaneous study (and award) of bachelor's and master's degrees by exceptionally gifted students. Master's degrees are most commonly awarded in the arts (M.A.), sciences (M.S.), education (M.Ed.) and business (M.B.A.). Requirements for completion of a master's degree vary widely according to the subject or field of studies and the particular institution. Some institutions require M.A. candidates to write a thesis, others do not. Some require candidates to demonstrate broad knowledge of

their subject or field in a comprehensive examination; others simply require exams in individual courses.

Well over 400,000 master's degrees are awarded in the United States each year, compared to about 1.2 million bachelor's degrees and 45,000 doctoral degrees. Almost half are earned in two areas: education (M.Ed.) and business administration (M.B.A.), with 26% of all master's degrees earned in education and 23% in business administration. Most faculty salary schedules mandate pay increases for teachers with master's degrees, and M.B.A.s (master of business administration) generally command considerably higher starting salaries in the business world than employees with only bachelor's degrees.

master teacher A formal title developed in the 1950s to differentiate and reward teachers who have superior classroom skills and who have also made outstanding contributions to their school. The designation was developed along with career ladders, which established merit systems with automatic salary increases and appropriate titles to reward exceptionally skilled teachers. Although designed to attract and keep better skilled teachers in education, the master teacher designation and the merit system it represents have been the target of much criticism by tenured teachers. Many of the latter believe seniority should be the basis of salary increments and resent some younger teachers, with less seniority, earning master teacher designations and passing more experienced teachers on the salary scale. The dispute is no different, however, from similar ones in other industries wrestling with the question of whether merit or seniority should determine employee pay.

mastery learning One of a number of strategies designed to provide the equivalent of individualized instruction in a conventional classroom setting. Designed to help students

achieve a predetermined level of competence, mastery learning is based on the concept that every student is capable of learning basic skills and acquiring the requisite knowledge if the curriculum and instruction are appropriately designed. The mastery learning model is a six-part, individualized program consisting of: learning objectives; preassessment of the student's current skills and knowledge; instruction (adapted to the objectives and the learner's case history); diagnostic assessment (testing, etc.); prescription of new or changed instructional methods; and postassessment, to see whether the student has achieved the original learning objectives.

Although widely accepted as a valuable and fundamental approach to teaching, mastery learning has had mixed practical results. On the positive side, it has formed the basis for much of the computer-based, PROGRAMMED INSTRUCTION that is widely used in American elementary and secondary schools and even in colleges. In the classroom, however, mastery learning has often proved difficult for many teachers to implement, despite overwhelming evidence in studies by BENJAMIN BLOOM and other researchers that almost all children can indeed learn if they are given enough time, opportunities and resources. One of the originators of mastery learning, Bloom found that 80% of students who were provided with one-on-one teaching achieved results normally reached by only 20% of students in conventional classrooms. Although one-on-one tutoring is both impractical and too costly for most schools, mastery learning was designed to provide each student with an individualized program that has some of the effects of one-on-one teaching, because its goals, pace and methods of instruction are adapted to individual needs.

Unfortunately, many teachers fail to administer mastery learning techniques to each student with equal enthusiasm. Many teachers simply do not believe all children can learn;

others believe that children who do poorly are themselves to blame for their failures—because they are either incapable, lazy or rebellious. Even teachers who believe all children can learn have trouble implementing mastery learning in the typical school setting, where conventionality, regularity, fixed curricula and adherence to strict time schedules make it virtually impossible for teachers to let students be both different and conventional at the same time. Conventional schools thus tend both to discourage the very individuality that mastery learning requires and to reinforce teacher perceptions that learning patterns of individual children are relatively unchangeable. As a result the relative performance of students in any given class rarely changes. The best students at the start of the year usually remain so at the end of the year, and the poorest students usually remain at the bottom of the class.

matching test A form of multiple-choice examination with two columns, one a list of premises, the other a list of responses test-takers are expected to match with the appropriate premises. The benefits of matching tests are its ease of scoring, its entertaining value for test-takers and its ability to measure elementary reasoning skills. Its primary weakness is the possibility that, for some students, it measures recognition rather than reasoning skills.

mathematics In education, the science of numbers and all subtopics thereof, including arithmetic, geometry, algebra, trigonometry and calculus. Often used inaccurately as a synonym for ARITHMETIC, mathematics is a far broader field that includes arithmetic as but one of its basic elements. The reach of mathematics education stretches from preschool to university graduate schools. Ideally, formal mathematics education begins in kindergarten with woodblocks and other manipulatives, which students learn to sort by size, color,

shape and other characteristics. Kindergarten students also learn to count from one to 20, to tell time, to measure comparatively (bigger than or shorter than, for example) and to add and subtract single-digit numbers.

First grade math education extends counting to 100, calculation to double digits, measurement to a variety of media such as money, time, capacity, weight and temperature, and also introduces simple geometry and the concepts of estimating. Second grade extends numeration to 1,000, calculation into multiplication, division and the realm of algebra. Geometry is extended to three dimensions. Third grade introduces multiplication tables through 12 and multiplication and division of two- and three-digit numbers. Measurement of length, area, volume and weight is added to geometry. Students also learn the basics of probability and how to read graphs, along with the use of calculators and computers.

In fourth and fifth grades, students progress to more advanced work, mastering all basic arithmetic functions, along with place values, ratios, rounding and approximation, decimals, fractions, graphing, the banking process, means, medians, modes and so on. Story problems introduce them to algebra, while the use of protractors and graph paper carries them into advanced geometry, and more complex computer software enables them to model two- and three-dimensional shapes. Sixth grade ends elementary school mathematics education, with training in the associative, commutative and distributive properties of numerical expressions; exponents, square roots and cube roots; percentages; formulas for calculating length, area and volume of geometric shapes and figures; the Pythagorean theorem and angle-sum theorem.

In middle school, seventh grade students study prealgebra and the use of computers for problem solving, while eighth graders study first-year algebra. Public high schools require only two or three years of mathematics for

graduation in the academic track: Algebra I in ninth grade; Euclidean plane geometry in tenth grade; and Algebra II and trigonometry in eleventh grade. When offered, twelfth grade mathematics generally covers advanced algebra, trigonometry and precalculus. Academically advanced secondary schools compress the entire mathematics curriculum to permit the study of calculus in twelfth grade.

Although the above math curricula do not differ substantially from those in the rest of the industrialized world, their administration in American public schools had been far poorer than in educational systems elsewhere, and it fell short of the standards set by the National Council of Teachers of Mathematics. In 1988, for example, American 13-year-olds ranked last among students from Canada, Ireland, Korea, Spain and the United Kingdom. Nine-year-old Americans ranked ninth among students from 10 nations participating in the International Assessment of Educational Progress in 1991, scoring an average of 58% on a mathematics test. The other participating nations and their scores were Korea (75), Hungary (68), Taiwan (68), former Soviet Union (66), Israel (64), Spain (62), Ireland (60), Canada (60) and Slovenia (56). By 2000, the picture had not changed much, despite vast increases in federal, state and local spending on educational reforms. Although the United States spent an average of \$8,855 per student on primary and secondary school education—highest in the world but for Switzerland, which spent \$9,780—American 15-year-olds ranked only 18th in the world in reading literacy, 28th in mathematics literacy and 14th in science literacy. On the 2005 National Assessment of Educational Progress test in math, only 30% of American fourth and eighth graders scored at the “proficient” level, meaning they could perform multistep problems and showed familiarity with algebra. Nationally, colleges identified 22% of incoming freshmen as needing remedial math.

Minority students present an even more dismal scoring record, with black high school seniors scoring 10% below their white classmates and Hispanic students scoring 7% lower than whites.

In standardized tests given to a representative sample of 250,000 American fourth, eighth and twelfth graders as part of the U.S. Department of Education's National Assessment of Educational Progress, 75% scored below standards set by the National Council of Teachers of Mathematics in 2003. Based on three levels of achievement—"basic," "proficient" and "advanced"—the tests found that 76% of American students met basic standards, but only 31% were proficient and 4% advanced. "Basic" was defined as partial mastery of mathematics ideas expected at specific ages; "proficient" meant mastery of all mathematics ideas expected at specific ages; and "advanced" performance represented superior work above minimum expectations. The results have been a significant—often dramatic—rise in the level of what American public schools deem proficiency in mathematics as measured by American government tests, with average proficiency for all students climbing 5.5% in the decade ending in 2000. The percentage of nine-year-olds (fourth grade) exhibiting proficiency jumped 60%; the percentage of 13-year-olds (eighth grade) 29%, and the percentage of 17-year-olds (twelfth grade) nearly 18%. Unfortunately, whatever American public schools and the designers of their mathematics tests defined as proficiency in mathematics still left American students woefully behind students in the rest of the industrialized world.

Critics of mathematics instruction in the United States contend it fails to teach students reasoning skills. Indeed, in another nationwide test administered to 250,000 students, the Department of Education's National Center for Education Statistics found that only 16% of fourth graders, 8% of eighth graders and 9% of

twelfth graders correctly answered mathematics questions requiring problem-solving skills. The test covered algebra, geometry, measurements, statistics and data analysis. Fourth graders were asked, for example, to use words and pictures to show how a boy who eats half a pizza may eat more pizza than a girl who eats half of a different pizza. Minority students fared far worse than white students. Among twelfth graders, 10% of white students did well, compared to 4% of blacks and Hispanics. Students in poor urban areas did far worse than those in more affluent areas, and private school students had substantially higher scores than public school students. Contrary to the myth that boys are innately more proficient in math than girls, there were no differences between male and female scores in any of the various age groups.

The demand for improvement in student problem-solving skills led to changes in the training of mathematics teachers and an adaptation of the way the math curriculum is presented. Students are encouraged to use calculators and computers at an early age to eliminate the drudgery of pencil and paper. The new approach relies less on memorization than on instruction in the basic concepts of mathematics. In simplest terms, third grade problems such as this: A boy has three apples and eats one. How many apples does he have left? have been replaced with problems such as this: Three students have two apples. How do we share? "Traditional math instruction for third- and fourth-grade students," explains the National Council of Teachers of Mathematics, "emphasizes memorization, drill and practice." Problems like the one below ask children to focus on finding the total, not on understanding what the numbers mean.

Susie has two quarters.
John has three dimes.
Joey has a nickel.

How much money do Susie, John and Joey have together?

New teaching methods use math as a way to reason, communicate and solve real problems. Problems like the ones below emphasize hands-on activity and real-life applications.

Problem 1

I have six coins worth 42 cents; what coins do you think I have? Is there more than one answer?

Problem 2

I have some pennies, nickels and dimes in my pocket. I put three of the coins in my hand. How much money do you think I have? Can you list all the possible amounts I have when I pick three coins?

Critics of the new approach to mathematics teaching have no argument against increased instruction in problem solving, but they disagree with the widespread use of calculators and computers in teaching basic mathematics functions they believe should be committed to memory. Moreover, they point out that poor school districts cannot afford to provide students with computers, while poor families can ill afford to provide their children with sophisticated calculators. Nevertheless, mathematics instruction is making a dramatic shift from a narrow focus on routine skills to development of broad mathematical skills such as performing mental calculations and estimates and recognizing which mathematical methods are appropriate for solving various types of problems.

Mather, Cotton (1663–1728) Puritan clergyman, author, scholar and a force behind the founding of Yale University. Born in Boston, the eldest son of Harvard president INCREASE MATHER, Cotton Mather graduated from the Boston Latin School and enrolled at Harvard at the age of 12, the youngest student ever admitted at that time. He studied science and medicine, but after assisting his minister-father, he decided on the ministry and was



Cotton Mather (Library of Congress)

ordained. He joined his father at Boston's Second (North) Church, where he remained the rest of his life. He turned his pulpit into a national and even international stage from which his orthodox preachings and bitter antipathy toward heterodoxy inflamed the hysteria that culminated with the famed Salem witchcraft trials of 1692. His study of "possession," *Memorable Providences Relating to Witchcrafts and Possessions*, was used as a quasi-legal document at the trials, although he did not participate and, like his father, disapproved of the excesses and unreasonable actions of the judges.

The appearance of dissenting Protestant churches in the late 1600s reduced Mather's influence in religious matters. Liberals gained control of Harvard College, then the only school that prepared young men for the ministry.

Mather ran for the presidency of his alma mater, but he was defeated by liberal ministers in both 1707 and 1725. Bitterly disappointed at not succeeding his father to the Harvard presidency, he shifted his allegiance to Yale College as a bastion of Congregational orthodoxy.

Though unbendingly orthodox in his religious views, Mather was not inhumane. Indeed, he was in many ways a progressive humanist, and he devoted most of his life to good works, scholarship and the promotion of education, although he believed that the chief purpose of education was to prepare all children for conversion to his brand of orthodox Congregationalism. He favored universal education as an arm of Congregationalism and not only supported the founding of Yale, but also helped promote the founding of schools for white, Indian and African-American children. A prolific scholar, he wrote some 450 tracts and books on topics ranging from science and medicine to history and theology. Easily one of the most famous American leaders of his day, his *Magnalia Christi Americana* (The greatness of American Christianity) was, for many years, the finest and most complete ecclesiastical history of 17th-century New England.

But he also wrote on natural history (*Curiosa Americana*), church music (*The Accomplished Singer*), civility (*Essays to Do Good*), the home (*A Family Well-Ordered*), child care (*Cares About the Nurseries*) and the training of ministers (*Manuduction ad Ministerium*). Never averse to recognizing the benefits of scientific progress, he supported the then-suspect experiments to inoculate against smallpox and wrote *The Christian Philosopher* to expound his belief that the then-new science of natural history provided new insights into God's wisdom.

Mather, Increase (1639–1723) Early colonial educator, Puritan religious and political leader, and first American-born president of Harvard College. Born in Dorchester, Massa-

chusetts, Mather graduated from Harvard at 17 and earned his master's degree at Trinity College, Dublin. Returning to Massachusetts, he joined his father in the ministry and eventually took over the pulpit of Boston's Second (North) Church, where his charismatic personality, strong preaching and profound scholarship lifted him to political as well as religious leadership. A prolific author, he wrote more than 150 books, mostly on theological matters, but also on science, history and politics. His widely circulated *Cases of Conscience Concerning Evil Spirits* helped end the religious hysteria surrounding the Salem witchcraft trials.

He was appointed licenser of the press in 1674, a fellow of Harvard a year later and the seventh president of Harvard in 1685—a highly political post that he retained until 1701, when



Increase Mather (Library of Congress)

disputes over restoration of the Massachusetts colonial charter forced his ouster. The Crown had annulled the existing charter and appointed royal governors to rule the colony. Mather went to England to petition the king to restore the charter and self-rule, but his fellow colonists objected to many of the terms in the new charter. Although his political career came to an abrupt end, he remained a leader of New England Congregationalism until his death. He was the recipient of the first honorary degree awarded in the Americas, a Doctor of Sacred Theology given to him by Harvard College in 1692, while he was its president.

matriculation A term widely used by colleges as a synonym for enrollment—as in “matriculation into the senior class.” Derived from the Latin *matricula*, or public roll.

Matthew effect In education, a phenomenon that sees infants from culturally advantaged backgrounds learn at progressively faster rates throughout their educational years, while children from culturally disadvantaged backgrounds learn at progressively slower rates. Its name is derived from the passage in the gospel according to Matthew: “For unto every one that hath shall be given, and he shall have abundance; but from him that hath not shall be taken away even that which he hath.” Recognition of the Matthew effect led to the development of a plethora of government sponsored programs to provide disadvantaged children with preschool programs designed to compensate for cultural disadvantages.

Maury, James (1718–1769) Eighteenth-century Virginia minister and teacher whose students included, among others, Thomas Jefferson, who enrolled in Maury’s “log school” in 1758, at the age of 14. In preparing Jefferson for subsequent enrollment in the College of William and Mary, Maury instilled in the young

Jefferson a lifelong interest in the classics. Aside from his teaching skills, Maury also was an outspoken critic of efforts to perpetuate traditional English education in the colonies. Except for students destined to enter university to study law, medicine or theology, he thought it a waste to teach colonial children in the wilderness ancient Latin and Greek languages and literature. Instead, he proposed a curriculum of basic history and geography; a survey of colonial laws, customs and religion; the practical elements of mathematics; and basic English grammar and literature.

Maury proposed that the academic curriculum be followed by an apprenticeship “under some person, eminent in the business he [the student] chooses, in order to gain an insight into all its modes, forms and mysteries. The genius of our people, their way of life, their circumstances in point of fortune, the customs and manners and humors of the country, difference us in so many important respects from Europeans, that a plan of education, however judiciously adapted to these last, would no more fit us, than an almanac, calculated for the latitude of London, would that of Williamsburg.”

Maury’s views initially earned him nothing but scorn from his contemporaries, but he nevertheless was part of a small but growing number of early educators who called for a more practical education appropriate for young men destined to fashion a new nation out of the wilderness. Maury influenced the young Jefferson to become a champion of such practical, secular education. When Jefferson founded the University of Virginia, he introduced a curriculum based on Maury’s ideas.

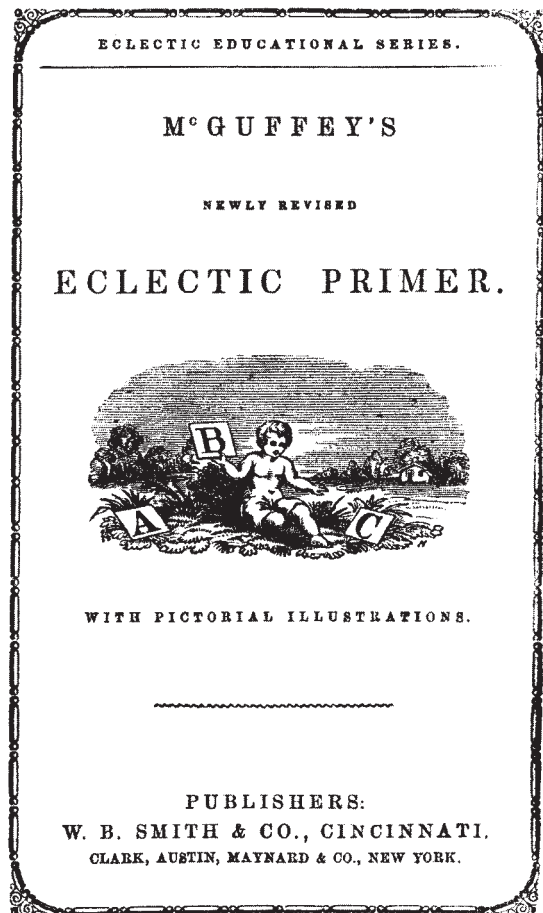
McCarthy v. Philadelphia Civil Service Commission A 1976 U.S. Supreme Court ruling that upheld as constitutional Philadelphia’s ordinance requiring city employees, such as teachers, to live within the city limits. By extension, the decision applied to all other U.S.

communities with similar residency requirements for public employees.

McCollum v. Board of Education A 1948 Supreme Court ruling that ordered the public schools of Champaign, Illinois, to cease the practice of releasing students for religious instruction by visiting clerics on school grounds. A then-common practice in schools across the United States, the excusing of students from classes to attend religious instruction was deemed a violation of the establishment clause of the First Amendment of the United States, because it involved “too great” a cooperation between church and state. Officially called *People of State of Illinois ex. rel. McCollum v. Board of Education*, the ruling was partially reversed four years later in *Zorach v. Clausen*. In that case, the Supreme Court upheld a New York law allowing public schools to release students for religious instruction held outside public school facilities and requiring no public financial support. The differences between the two cases centered on the site of the religious instruction. In Illinois, the minister came to the school to instruct children in an unused public school classroom. Sometimes, too, the public schools bused children to churches for religious instruction.

McGuffey, William Holmes (1800–1873) American teacher, educator, minister and author of the most widely used 19th-century reading and writing textbooks. Born in Virginia, McGuffey grew up and was educated in Ohio and Pennsylvania. After teaching in schools in Ohio and Kentucky, he became a teacher of ancient languages and mental philosophy (psychology) at Miami University of Ohio, where he began compiling his famous readers. His *First Reader* and *Second Reader* were published in 1836, when he was elected president of Cincinnati College (now the University of Cincinnati). The *Third Reader* and *Fourth Reader* were

published the following year. In 1839, McGuffey was appointed president of the University of Ohio, which closed for lack of funds three years later. In 1844, his brother, Alexander, an editor of an educational periodical, compiled the *Fifth Reader* and, 13 years later, in 1857, the *Sixth Reader* and *High School Reader*, which completed the series. During the intervening years, the



Cover of McGuffey's *Eclectic Primer*, one of the McGuffey “readers” used to educate several generations of American children in the 37 states during the 19th century (*Library of Congress*)

McGuffeys constantly revised, updated and edited the earlier readers.

Made up of simple moral lessons, fables, poems and excerpts from American and English literature, the McGuffey readers provided the first comprehensive system of reading instruction for American “common” schools and public school systems. In addition to a primer, each reader came with charts, spellers and other pedagogical tools. Lessons in each reader were sequentially arranged, in order of increasing difficulty and sophistication. In addition to reading and writing skills, the readers taught spelling, comprehension and elocution. All were an integral part of reading instruction in the early 19th century, when most reading was done aloud in social gatherings of friends or family. Specific notes guided each student on inflection, articulation and gestures. Lessons contained such prefatory guidance as, “Read this story exactly as if you were telling it to someone.” Advanced readers contained orations of Daniel Webster and soliloquies from Shakespeare.

The readers went beyond reading, writing and rhetoric, however—and it was their very scope that made them so popular among teachers. In addition to literary extracts, they contained a wealth of historical, scientific, literary, biblical and moral instruction—all tied to the American experience. The heroes of American history were industrious, honest, intelligent, brave and even biblical in stature. The readers compared George Washington to Moses leading his people to freedom and the Promised Land. Providence guided Columbus to America, said the McGuffey readers, and God intervened to bring the Revolution to its successful conclusion. Indeed, the American nation and its government were nothing less than “the divine scheme for moral government.” Their high moral tone and patriotism pleased parents, clergymen and politicians; the explicit instructions pleased teachers; and

the entertaining tales (sometimes) pleased students.

By 1870, the McGuffey readers had become the American nation’s official textbooks for children. Some 47 million copies had been sold by then; by the end of the century, total sales reached 122 million. Used by public school systems in 37 states, they served a broader educational function than simple instruction. In effect, they produced the nation’s first common curriculum and raised the level of instruction to a common standard in schools scattered across the nation. The McGuffey readers made education similar in schools everywhere, thus allowing students (and teachers) to move from one school to another without significantly interrupting their education or losing time having to adapt to a new curriculum.

Many scholars believe the McGuffey readers were directly responsible for creating the so-called American ideal and for shaping the American mind to believe in that ideal. Other scholars argue that the American mind (along with marketing realities)—that is, the demands of parents, teachers and clergy—shaped the content of the readers. Although the truth lies somewhere in between, there is no question that the McGuffey readers helped create the myth that the United States of America was indeed “God’s country” and that its actions, no matter how honorable or barbaric they might sometimes be, were divinely ordained.

After leaving the University of Ohio, William McGuffey taught at a Cincinnati high school for two years, during which time he joined others in persuading the state legislature to establish a public school system in Ohio. In 1845, he moved to the University of Virginia, where he served as a professor of philosophy until his death. Miami University of Ohio is the site of a McGuffey museum and the most extensive collection of McGuffey papers and memorabilia.

Mead, Margaret (1901–1978) Pioneer American anthropologist, sociologist, social critic and educational theorist whose studies of primitive cultures spawned a variety of conflicting pedagogies in American education. Born in Philadelphia to a family of scholars, she earned her bachelor's, master's and doctor's degrees at Barnard College and Columbia University, where she was enthralled by the work of Columbia's pioneer anthropologist Franz Boas (1858–1942). As Columbia's first professor of anthropology, Boas earned world renown by proving that there was no scientific basis for racism and that the theories of innate racial differences that held sway in scientific and legal communities throughout the world at the turn of the 20th century were specious.

Mead decided to build on Boas's work by studying the evolution of civilization. She traveled to the South Seas to examine the most "primitive" societies that had not yet been "spoiled" by "civilization." The result was a work that startled the educational world—*Coming of Age in Samoa*. Published in 1928, the book described Mead's findings during the nine months she lived among the Samoans. What she found was a relatively tension-free society, where young men and women happily and quietly evolved from infancy through childhood and adolescence and into adulthood with none of the conflicts and emotional storms that plagued American adolescents. The serenity of Samoan childhood and adolescence, she concluded, was the result of three key factors: The Samoan child was raised by a large, extended family and quasifamilial group of friends and neighbors, not just by the child's father and mother; as early as possible, each family assigned its children real responsibilities appropriate to their ages; Samoan children did not face the enormous range of choices given to American children.

Because of its complexity, American society could not educate its children the same way

as Samoans, but Mead insisted that American society could refashion its educational system to be as appropriate for American culture as the Samoan educational system was for Samoan culture. Simply because of the huge range of choices faced by American children, it was essential, said Mead, that American education teach its children "how to think, not what to think."

Two years later, Mead returned to the South Seas, this time to study the culture of the Manus in New Guinea. The resulting *Growing Up in New Guinea* caused as much consternation for American educators as her work in Samoa. "Human nature," she concluded, "[is] the rawest, most undifferentiated raw material, which must be moulded into shape by its society. . . ." Schools and other institutions, she said, had little effect on the "education" of children or the shaping of society. "Whatever the method [of education] adopted, whether the young are disciplined, lectured, consciously taught, permitted to run wild or even antagonized by the adult world—the result is the same. The little Manus becomes the big Manus, the little Indian, the big Indian. When it is a question of passing on the sum total of a simple tradition, the only conclusion which it is possible to draw from the diverse primitive material is that any method will do." Thus, she concluded, the only way to change the character of society's children was for the entire society of adults to make the change in concert. No institution such as a school could do the job, she said. The school was simply a place for transmission of information, and it was doing the job badly.

Although Mead returned to the South Seas in the 1930s and ensuing decades, she began to spend more time in American academe, lecturing at such universities as Harvard and Columbia and turning out hundreds of articles and books on education, gender discrimination, international affairs and, of course, anthropology and sociology. Her works on education—

The School in American Culture (1951), for example, and an article for the *Harvard Business Review* (1959) entitled “Why Is Education Obsolete?”—invariably challenged the educational community. In the first work, she charged that American schools and teaching methods were obsolete, that all they succeeded in doing was to teach traditions and skills for a society that had existed in earlier times but that existed no longer. Students, therefore, were leaving schools unequipped to cope with life in modern society. What was needed, she said, was a “whole new institution” with “a totally new kind of teaching—a teaching of a readiness to use unknown ways to solve unknown problems.” In “Why Is Education Obsolete,” Mead pointed out, “No one will live all his life in the world into which he was born, and no one will die in the world in which he worked in his maturity.” Thus, she argued, the typical school’s “vertical transmission of the tried and true by the old, mature, experienced teacher to the young” was obsolete and worthless. She called for its replacement with “lateral transmission of knowledge . . . a sharing of knowledge by the informed with the uninformed, whatever their ages.”

In *Culture and Commitment* (1970), Mead described how world societies were divided into three types of cultures: post-figurative cultures, in which adults teach their traditions to children, who, in turn, repeat the past; “cofigurative cultures,” in which present conditions determine what is taught and in which adults and children teach and learn from each other; and “prefigurative cultures,” in which children must help adults learn about experiences they have never had.

Late 20th-century society, said Mead, was a prefigurative culture in which educators—parents and teachers—were “immigrants in time,” along with their children, and had no way of knowing how and what to teach their children. It was essential, she said, that educational insti-

tutions transform themselves and begin to teach the young “instrumentally” rather than “coercively.”

“Primary education,” she said, would have to continue teaching children “what they need to know in order to be fully human in the world in which they are growing up—including the basic skills of reading and writing and a basic knowledge of numbers, geography, transportation and communication, the law, and the nations of the world.” But secondary education, she concluded, would have to remain a continuing process to be obtained “in any amount and at any period during the individual’s whole lifetime.”

For the last two decades of her life, Mead was curator of ethnology at the American Museum of Natural History in New York, where she continued her prolific writing—more than 20 books and endless numbers of monographs, articles, speeches and films—and also served as an advisor to the federal government. Although her pronouncements on education resulted in few substantial changes in American schools or teaching methods, her influence on the educational theorists who eventually do change American pedagogy was enormous. Her influence is already being seen in the increasing willingness of secondary schools to permit students to engage in independent research that is symbolic of the “prefigurative culture” in which the young help adults learn about experiences the adults have never had.

media In the broadest sense, agencies of mass communication, including newspapers, magazines, books, radio, television and films. Although all are unquestionably educative institutions, in that they can influence and manipulate human thinking and behavior, the term media has a different and more specific meaning in education—namely, instructional materials directly related to classroom teaching. There are four categories of such instructional

media: printed media, such as books, magazines, pamphlets; graphic media, such as wall charts, maps, bulletin board displays and overhead transparencies; photographic media (films, slides, photographs); and electronic media, including audio and video recordings, computer programs.

media center The relatively new appellation of the traditional school or college library. In strictest etymological terms, the word library refers only to a repository for books, its root, *liber*, being the Latin word for book. In the last half of the 20th century, however, most school and college libraries expanded their collections to include a wide variety of audio and visual materials, including CD-ROMS, video cassettes, and laser discs, tapes and computer-related materials. Moreover, computers tied to scanners, printers and other hardware can access and download audio and visual materials as well as textual materials from other libraries and databases throughout the world via the INTERNET. No longer limited to housing books alone, libraries—especially at schools and colleges—are more accurately designated media centers.

media specialist A professional library or media center manager whose training requires a bachelor's, master's or doctoral degree in library science. Primary duties of a media specialist include selecting, ordering, purchasing, cataloging and maintaining books, audiovisual materials and other media and controlling their circulation. In addition, media specialists must purchase and maintain ancillary equipment such as computers, mechanical handling equipment, shelving and storage facilities, and they must evaluate, purchase and maintain databases via the Internet. They must also plan budgets, manage institutional finances, oversee short-term and long-term building maintenance, manage fund-raising efforts and community service programs and serve as liaisons

with the public, with educators, with school authorities and with teachers and their students. Depending on the size of the media center, the media specialist may also be required to supervise support staffs of clerks, technicians, volunteer workers and students.

In schools, media specialists work closely with teachers to develop library-related curricula, select appropriate instructional materials, oversee the circulation of such materials and provide assistance to individual students and teachers.

(See also LIBRARIAN.)

mediated reading The short, transitional stage in the process of learning to read in which the student learns to associate spoken sounds with written letter symbols.

Medical College Admissions Test (MCAT)

A standardized test administered twice yearly by the American College Testing Program and required for admission to all accredited American medical schools. Designed by the Association of American Medical Colleges, the 5¾-hour test measures reading and mathematics skills, ability to solve science problems and knowledge of biology, chemistry and physics. The test is divided into four sections, each with a separate test score. The verbal reasoning section is a 65-minute, multiple-choice test that measures student ability to comprehend, reason and think critically. The two science sections—physical sciences and biological sciences—last 100 minutes each and consist entirely of science problems designed to measure knowledge of basic science concepts and their applications in problem solving. The fourth section is the writing sample, which asks for two 30-minute essays to demonstrate skills in the use of clear writing and logical presentation to develop a central idea.

medical education Formal, professional instruction and training leading to a doctor of

medicine (M.D.) degree and, ultimately, the right to practice medicine as a physician or surgeon. Medical education in the United States requires the study of college-level physics, biology and chemistry, four years of study in an accredited medical school, one year's professional training as a hospital intern and one to five years' practice and training as a hospital resident physician. To practice medicine, graduates of these programs must also pass state licensing examinations.

Formal medical education dates back to the first universities in medieval Europe. England's Oxford and Cambridge Universities have offered courses in medicine since they opened in the mid-13th century. The American colonies offered no comparable education—there were but two colleges in the 17th century, both devoted to preparing young men for the clergy—and those who sought formal medical education had to travel to England, Scotland or Ireland; only a handful of young men were wealthy enough to do so. All others learned their craft as apprentices, and those who managed to find learned, university-trained physicians to train them emerged with adequate skills. The vast majority, however, trained with men who themselves had learned as apprentices, with the result that ignorance was passed on from generation to generation.

By the middle of the 18th century, medical practice had deteriorated to a level that made most Americans fearful of having to visit a physician. It was John Morgan, a graduate of the College of Philadelphia (now the University of Pennsylvania) and a product of the medical apprenticeship system who determined to reform medical education in the colonies. He went to London in 1760 to study surgery at St. Thomas Hospital, then attended the University of Edinburgh medical school and later studied at the Royal Infirmary. After earning his M.D., he returned to America in 1765 and established

the first formal program of medical education in the colonies at the College of Philadelphia.

After his appointment as professor of the theory and practice of medicine, Morgan delivered a *Discourse upon the Institution of Medical Schools in America*, which is often called "the charter of medical education" in the New World. In it he called for a separation of "physic" ("the cure of inward diseases, and such complaints as require the use of medicines") from surgery and pharmacy. He also called for establishing a new medical education curriculum based on liberal education in the arts, sciences and languages, along with extensive training in anatomy, "materia medica," botany (herbal medicine), chemistry, the theory of physic (physiology and pathology) and the practice of medicine. Although the times—and the rural composition of the colonies—did not permit the physician to give up surgery and pharmacy, Morgan's discourse led to the establishment of the first formal medical education and granting of M.D. degrees in the colonies—at College of Philadelphia in 1765 and, two years later, at King's College (now Columbia University) in New York.

Although the College of William and Mary and Harvard soon followed suit, few aspirants to medicine could afford the cost of attending such colleges, and the apprenticeship system for medical training continued to thrive. The typical medical apprenticeship of the early 19th century usually lasted three years, with the practicing physician, or "preceptor," furnishing instruction in science and medicine and, in exchange for \$100 a year, providing the apprentice with all the books and equipment needed for his training. Preceptors accepted apprentices as young as 15 and usually no older than 22 and expected them to be literate in letters and numbers and to have completed several years of schooling. The apprenticeship was divided into two phases. During the first, the apprentice "read

medicine," studying textbooks in chemistry, botany, anatomy, physiology, materia medica, pharmacy and clinical medicine and often performing dissections of animal and human cadavers. In the second phase, the apprentice accompanied the physician, visiting patients and assisting in bloodletting, blistering, mixing and administering drugs, dressing wounds, delivering babies and performing surgery. After completion of the apprenticeship, the physician awarded the apprentice a certificate that served as a license to practice.

The quality of such licensees obviously varied widely, depending on the quality of the preceptor. As the number of formally trained physicians grew, they led a movement toward state licensing and the organization of medical schools to raise the standards of medical education. Many organized their own private, independent medical schools; others established schools affiliated with nearby colleges. The number of medical schools proliferated from two in 1783, to 16 in 1831 and to 78 by 1876. They standardized medical education into a three-year program consisting of two four-month terms of schooling (absorbing and extending the reading phase of the standard apprenticeship programs), followed by 28 months of apprenticeship with an approved physician.

The retention of the apprenticeship element of training, however, continued to produce a huge disparity in the quality of practitioners. In 1884, pathology professor WILLIAM HENRY WELCH at the then-new JOHNS HOPKINS UNIVERSITY was given carte blanche to organize a medical school, and he forthwith decided to make medical education in the United States comparable to that in other advanced societies. Welch developed a new, four-year medical curriculum consisting of two years of laboratory study of preclinical subjects, such as anatomy, physiology, pharmacology and pathology, followed by two years of in-

hospital study of the clinical subjects of medicine, surgery and obstetrics.

Welch helped found both the Johns Hopkins Hospital in 1889 and Medical School in 1893, of which he was the first dean and which he linked inextricably to the hospital by recruiting such distinguished physician/researchers as Sir William Osler (1849–1919) and the renowned surgeon William S. Halsted (1852–1922) to staff both institutions. He thus made the hospital's first great physician/teachers central to the life of the medical school, and made the medical school's laboratory and library facilities equally central to the research needs of the hospital and its physicians. Welch strengthened those ties by creating an appointment system that made professors in the medical school serve as heads of their departments in the hospital. The appointments thus made them responsible for delivery of medical services as well as medical instruction, and the arrangement created the first so-called teaching hospital in the United States. Their combined duties led to the integration of advanced medical education with practical hospital routine, as they led their students on daily rounds of hospital wards, translating student textbook and laboratory knowledge into actuality. The teaching standards and methods—and the four-year medical degree—established at Johns Hopkins became a model for other universities and teaching hospitals across the United States.

The final phase in the evolution of American medical education came in 1910, when Dr. Abraham Flexner of the CARNEGIE FOUNDATION FOR THE ADVANCEMENT OF TEACHING proposed raising standards of the medical profession by limiting access to the profession. He proposed reducing the number of medical schools in the United States from 155 to 31, upgrading medical school training and tightening the standards for graduation. Most of the reforms in the FLEXNER REPORT were adopted and led to significant improvements in the quality of medi-

cal education in the United States but also brought about a significant decline in doctor-patient ratios and delivery of medical care to the general population. From 1980 to 2005, only one new medical school opened, raising the total from 124 to 125, and the number of doctors graduating each year increased by only about 200, to some 15,250 in 2005. Meanwhile, the American population has increased by 50 million—about 20%—from about 250 million to more than 300 million, and significant elements of the increase are made up of people needing more than average medical care: infants; the aged, who are living longer; and poor immigrants. The result has been an acute shortage of doctors, and, with inadequate seats in American medical schools, many Americans are enrolling in foreign medical schools, and both they and foreign doctors are flocking back to the United States to practice. Indeed, by the end of 2005, 25% of doctors practicing in the United States trained in foreign medical schools. Some 60% of them were men and women from third-world countries.

Meek v. Pittinger A 1975 U.S. Supreme Court decision that struck down as unconstitutional a Pennsylvania law under which parochial and private schools were provided with loans of state-owned maps, projectors, films and other public school equipment, as well as with public school teachers for remedial and special learning courses. The Court held the law a violation of the ESTABLISHMENT CLAUSE of the FIRST AMENDMENT of the CONSTITUTION OF THE UNITED STATES mandating the separation of church and state. However, the Court did not ban all laws providing state aid to parochial and private schools. It said that any such law must meet a three-part test: "First, the statute must have a secular legislative purpose. . . . Second, it must have a 'primary effect' that neither advances nor inhibits religion. . . . Third, the statute and its administration must

avoid excessive government entanglement with religion. . . ."

The Meek case was in sharp contrast to *EVERSON V. BOARD OF EDUCATION*, a 1946 case in which the High Court ruled that a New Jersey board of education had not violated the Establishment Clause of the First Amendment of the Constitution by reimbursing parents of parochial, as well as private, school children for school bus costs. The Court ruled that the program provided no funds to the schools themselves and, therefore, did nothing to promote establishment of a religion. *Everson* was the first application of the Establishment Clause of the Constitution to education, and it became the core of a series of legal cases based on the CHILD BENEFIT THEORY, which holds that universally available aid provided directly to children and benefiting only them cannot be construed as being of any benefit to the schools that they attend.

(See also *AGUILAR V. FELTON*; *CHURCH-STATE CONFLICTS*; *MITCHELL V. HELMS*; *WOLMAN V. WALTER*.)

Meiklejohn, Alexander (1872–1964) English-born educator who helped transform the academic emphasis of American liberal arts colleges from moral to intellectual training. After immigrating to the United States at the age of eight, Meiklejohn was educated in the Pawtucket, Rhode Island, public schools and at Brown University, where he earned his B.A. and M.A. After receiving his Ph.D. from Cornell University, he returned to Brown as a philosophy instructor in 1897. He was responsible for creating the post of dean at Brown, and he assumed that position in 1901.

In 1912, he was named president of Amherst College, the first nonalumnus and nonclergyman to hold that post. He immediately embarked on a scheme to change Amherst's curricular emphasis from molding "the well-rounded man of good, Christian

character" to a program that trained students to make intelligent decisions in a complex society—training that he considered a moral obligation of all liberal arts colleges in a self-governing, democratic society. He introduced survey courses in the social sciences and a core curriculum in the arts and sciences that turned Amherst into a model of liberal education for other small, private colleges.

In 1920, Meiklejohn helped found the American Civil Liberties Union and became vice-chairman of the League for Industrial Democracy, which sought to expand worker rights. His liberal, off-campus affiliations and his on-campus efforts to secularize the curriculum alienated theologically-oriented alumni and older faculty, and he was fired in 1923. He went to the University of Wisconsin in 1925, and three years later he organized and became director of the Experimental College there. The college based its first two years of study on the GREAT BOOKS PROGRAM, offering but a single course during those two years: Fifth-Century Athens and Modern America. During their last two years, Experimental College students pursued their professional or vocational interests. Again, conservative, older faculty rebelled, and the university closed the college in 1933. Meiklejohn continued as a part-time teacher at Wisconsin, while devoting the rest of his time to the organization and direction of the pioneering School of Social Studies in San Francisco. He retired from both institutions in 1938 and spent the rest of his life lecturing and writing.

memorization The process of storing and retrieving, reproducing or recalling information. Information storage usually consists of three stages: receipt and absorption of information into the sensory system, short-term storage, and long-term storage. Factors that stimulate memorization include the level of learning (repetition and practice), the similarity of the newly memorized materials to previ-

ously memorized materials, the uniqueness or stark dissimilarity from previously memorized materials, the meaningfulness and utilitarian value of the material, and the organization of the new material within a framework of previously learned materials.

mental age (MA) A level of individual performance on a standardized test, measured in years and months. Often called the intellectual age, MA was introduced by French psychologist ALFRED BINET in 1908, when the Binet-Simon intelligence test was revised. Age norms were established for each level of performance, and any child, regardless of actual chronological age, who scored at any given level of performance was said to have a mental age for that level. Thus, a child of eight or 12 whose score on the Binet-Simon test matched the 10-year-old norm was said to have a mental age of 10. Mental age by itself was found to be an unreliable measure of intelligence, however, because of its dependence on past experiences. Thus, it accelerates during the early years and decelerates in the later years. Because of its unreliability, the concept was replaced with that of the Intelligence Quotient in 1916.

mental philosophy One of the three Aristotelian divisions of philosophy, which 17th- and 18th-century educators in England and the American colonies used as a convenient approach to teaching philosophy in secondary schools and colleges. The other divisions were NATURAL PHILOSOPHY, which dealt with the sciences, and MORAL PHILOSOPHY, which covered the ethical and theological rules for a happy life. Mental philosophy encompassed LOGIC and MATHEMATICS, but the two were separated into distinct, more concentrated courses of study during the mid-17th century as the body of knowledge in each sector expanded. Over the next century, mathematics itself was divided into its various branches—arithmetic, geome-

try and so on—each of which was taught as a separate course.

mental retardation An irremediably low level of intellectual functioning at least 30% or more below the norm for a person's age group. Mentally retarded children score well below the normal range on INTELLIGENCE QUOTIENT (I.Q.) tests and are so disabled that they will usually never reach adult intellectual levels. However, many do learn social skills that allow them to adapt to normal living in society.

Because it implies a ceiling on ability, the term *mental retardation* produces enormous hostility from parents and others associated with retarded children. Retardation can be congenital (as in the case of Down's syndrome) or caused by environmental problems, birth trauma, physical trauma or infections during infancy or childhood. Like all children, mentally retarded children show wide variations in intellectual capabilities. Educators categorize retardation by I.Q. levels as mild, moderate, severe and profound. The mildly and moderately retarded are generally able to learn enough skills to permit their assimilation into normal community life. Indeed, most can live and work independently as adults.

Until 1975, all but the mildest of the mentally retarded were part of an estimated 8 million handicapped American children who were excluded from public schools. Many were institutionalized; others forced to remain at home. In 1975, however, Congress passed the landmark Education for All Handicapped Children Act after a series of televised reports exposed unconscionably cruel conditions in mental institutions. Amended in 1983 and 1986, the law forced all public schools to guarantee all handicapped children, including the mentally retarded, "free and appropriate" education "in the least restrictive environment," namely, public schools. The law provides federal funds to states and local districts for special programs

and services for mentally retarded and other handicapped children. Although modified programs are required, MAINSTREAMING now places many of the mentally retarded in conventional classrooms with nonhandicapped students.

mentor In general, a wise, knowledgeable counselor, but in education, a title conferred on two types of special instructor. At the college or graduate school, a mentor refers to a professor or instructor with responsibility for guiding and overseeing, but not primarily instructing, a student through a complex program of studies and research. In teacher training, a mentor, or mentor teacher, is an experienced and highly skilled teacher who has been given the responsibility for assisting, guiding, training and serving as a role model for new teachers during their internships or first year in the profession. Mentor teachers also lead advanced, in-service training programs for experienced teachers. In both types of training, mentor teachers lead staff development programs, conduct seminars and demonstrate teaching skills in the classroom to observer teachers.

Mentor teachers are expected to spend as much as 60% of their time training other teachers at the school or district level. As with MASTER TEACHERS, the designation as a mentor teacher represents professional recognition of distinguished achievement and skills with commensurately high financial recompense. In Homer's *Odyssey*, Odysseus entrusts his friend Mentor with the education of his son.

mercantilism An economic system developed in the 1500s in England, with the central government taking control of the national economy by accumulating its own central stores of bullion with which to establish its own monopolies, manipulate foreign trade and control development of agriculture and manufacturing. As part of the development of mercantilism, two laws were passed that had a

lasting impact on education, both in England and in its American colonies. In 1563, the Statute of Artificers called for compulsory service in agriculture of all persons between the ages of 12 and 60 who were not otherwise employed. Designed to rid England of vagrants and itinerant beggars, the law made it illegal to be idle, thus forcing all families either to send their children to school or to bond them out as apprentices. The statute also established strict definitions of the terms and pay of apprentices, including seven-year term limits, to prevent exploitation of the young by unscrupulous tradesmen.

A second law, the Poor Law of 1601, went a step further to eliminate idleness: It ordered each parish to set up committees to oversee the poor and levy taxes, if necessary, to build and operate workhouses for the idle poor to work in productive manufacturing. By assigning poor children to workhouses as apprentices, communities sought to ensure every child basic skill training. Workhouses were initially seen as adjuncts to schools and families and thus as stabilizing and educative influences. In fact, they became institutions of exploitation and cruelty where little useful production or education ever took place.

Mercer, Charles Fenton (1778–1858) Virginia attorney, legislator and sponsor of an unsuccessful attempt to establish a system of universal public education in his state. Ironically, it was another proponent of just such a system—Thomas Jefferson—who was responsible for defeating Mercer's efforts and inadvertently dooming Virginia to substandard elementary and secondary education for the rest of the 19th century.

In 1810, Virginia established a literary fund, the interest from which was to be used to pay for public schools "in each and every county in the state." The moneys generated, however, were enough to pay for the education

only of the poor, with the rest of the population expected to pay for their own education. Six years later, after the fund had expanded, Mercer introduced a bill "providing for the establishment of primary schools, academies, colleges and a university." The university was to be built in the Shenandoah Valley. The bill passed the Virginia House, but Jefferson was responsible for its defeat in the Senate. The reason was geographic partisanship. Earlier, Jefferson and his "eastern elite" had introduced a similar bill, calling for the building of a university on the foundation of Central College in Charlottesville, in Jefferson's home county. Mercer and the western Virginians blocked that bill, and in 1817, when they introduced their own school bill, Jefferson and his political allies retaliated in kind.

In 1819, Jefferson was able to win passage of legislation to build the state university at Charlottesville, but to obtain support from conservative plantation interests he had to abandon plans for establishing a public primary and secondary school system. Although Virginia's legislators attempted twice more to establish a system of public schools before the Civil War, both efforts failed. In the end, the Jefferson-Mercer feud left Virginia with a great university, but no primary or secondary school system to feed it. Virginians, said Mercer, were trapped in the humiliating experience of sending their children to the North for an education. Not until 1870 would a new Virginia constitution mandate the establishment of a "uniform system of free public schools."

merit pay A salary scale in which pay increases are awarded on the basis of employee performance. Widely used in industry, merit pay has long been the center of bitter controversy in education. Proponents contend it rewards deserving faculty and encourages self-improvement and hard work. Opponents argue that there are no objective ways to measure

performance in teaching and that, lacking such measurements, merit pay simply encourages favoritism.

metacognition A theory of self-directed learning as it applies to students and their ability to think about and take charge of their own thinking and learning processes. According to developmental psychologists who refined the theory, metacognition consists of four elements that combine to improve a student's ability to learn:

1. Action, including the use of specific tactics for learning, such as memory tricks, taking notes and outlining.
2. Goals, as defined by the student and his ability to recognize what he needs and wants to learn.
3. Metacognitive experiences that display student knowledge and allow students to become aware of how effectively they have learned something. Metacognitive experiences include tests, homework, classroom recitations, discussions with parents, adults and other students and opportunities to teach other students.
4. Metacognitive knowledge, or the repertoire of learning strategies students acquire. This includes the ability to select appropriate learning tactics (or metacognitive components) and to know when and how to use them to acquire maximum learning results.

Methodism A worldwide Protestant movement and the second largest Protestant religion in the United States, after Baptists. Methodists have been responsible for founding more than 100 American colleges—more than any other religion except that of the Roman Catholics. Methodism began in England in 1729, with a group of Oxford students led by John Wesley (considered the founder of Methodism) and his brother Charles, who wrote many of the hymns for the future church. Preaching a doctrine of equality of man and the promise of salvation for all who converted, the Wesleys

and their followers quickly won favor among the English working classes and among American colonists, to whose spirit of independence and egalitarianism Methodism carried enormous appeal. Barred from preaching from the pulpits of organized churches, Wesley and his followers preached in fields, where they drew far more potential converts than the churches could ever have held. Thus began the practice of outdoor revival meetings that would eventually capture the imagination of millions around the world.

From the original Wesley group at Oxford, none was more charismatic a speaker than George Whitefield, who eventually succeeded Wesley as leader of the Methodist movement worldwide. In 1738, he followed the Wesleys on a missionary journey to Georgia, where he established at least three schools and an orphanage. He made an evangelical tour of Virginia, Pennsylvania, New York and Boston and, over the next 30 years, was credited with founding some 50 Methodist colleges and universities and making Methodism the most important religion in 17th- and 18th-century America. The various colleges across the United States bearing the name Wesley or Wesleyan can trace their origins to Whitefield's seven lengthy visits to America.

Methodist missionaries traveled everywhere, promising brotherhood and salvation to all, organizing clubs and associations for all ages. Their missionaries worked among the Indians in Mississippi, the Roman Catholics of New Orleans, the German immigrants in New York City and the African Americans of the South. They organized huge "love feasts," or camp meetings, where all were welcome to pray, sing and testify. And, most important, they organized elementary and secondary schools and Sunday schools that offered education to all. Later they organized colleges and theological seminaries to broaden their reach, and they created the Methodist Book Concern,

which distributed books, tracts and periodicals across America.

Because of the diversity of its membership and the lack of autocracy in the church hierarchy, deep divisions inevitably arose among the Methodists. Segregation in the North during the early 19th century forced blacks to form their own churches: the African Methodist Episcopal Church in Philadelphia and the African Methodist Episcopal Zion Church in New York. Fear that bishops were gaining too much power led to a split among white Methodist churches in 1830. They divided into the Methodist Protestant Church and the Methodist Episcopal Church, with each of those churches splitting a decade later over slavery and leaving the Methodists hopelessly divided into small splinter groups. Although some reunification and healing of these divisions occurred during the 20th century, the Methodists remain divided into seven sects in the United States alone, with a total of almost 12.5 million members. The leading Methodist sects are the United Methodist Church, with more than 8.2 million members; the African Methodist Church, with 2.5 million members; and the African Methodist Episcopal Zion Church, with more than 1.4 million members.

Metric Conversion Act of 1975 A federal law to convert the system of measurements used in the United States from the U.S. customary measure (based on the British imperial system) to the metric system, or international system (abbreviated SI from its name in French, *Système Internationale*). Designed to bring U.S. standards into conformity with most of the rest of the world, the law was largely ignored except by manufacturing companies that faced the loss of foreign markets unless their products conformed to metric measurements. In education the Metric Conversion Act was largely ignored, too. Twenty years after its passage, American children were still learning the diffi-

cult-to-use, virtually obsolete and, in the global sense, useless customary measure.

Metropolitan Achievement Tests One of the most widely used batteries of standardized tests to measure student achievement in grades K through 12. There are six batteries of tests: Primer, for grades k-1.4; Primary I, for 1.5-2.4; Primary II, for 2.5-3.4; Elementary, for 3.5-4.9; Intermediate, for 5.0-6.9; Advanced, for 7.0-9.5; and High School, for grades 9-13. The Primer measures reading and writing ability and ability to listen for sounds. The Primary I subtests are "Word Knowledge," "Word Analysis," "Reading," "Mathematics Computation" and "Mathematics Concepts." As the tests become more advanced, they add such subtests as "Mathematics Problem Solving," "Science," "Social Science" and "Spelling." The high school battery measures achievement in language arts, social studies, mathematics and science. Published by the Psychological Corporation/Harcourt Brace & Co., the tests last from about an hour to as long as 4½ hours, depending on grade level. Other widely used achievement tests include the CALIFORNIA ACHIEVEMENT TEST, the IOWA TESTS OF BASIC SKILLS and the STANFORD ACHIEVEMENT TEST.

metropolitanism The gradual evolution, beginning in the 1880s, of complex interrelationships and interdependencies between central cities, their suburban rings and rural outlands. Geographically, metropolitanism has seen the gradual amalgamation of formerly independent towns into large cities such as New York and greater metropolitan areas such as Los Angeles. Such amalgamations originally meant huge savings from the elimination of duplicate services such as police, firefighting and sanitation.

In education, metropolitanism has had both positive and negative effects. On the one hand, metropolitanism has expanded the num-

ber of educational opportunities available to students residing in a metropolitan area. Vocational schools, academically or artistically specialized magnet schools and special education, which smaller, independent communities had not been able to afford, became available to a much broader student constituency. Metropolitanism has also facilitated racial desegregation of schools by allowing students to travel from one district to another within the broad jurisdiction of the central, metropolitan school board. (In some cases, the courts issued court orders to effect such desegregation, but the fact remains that metropolitanism facilitated the ultimate results.) On the negative side of metropolitanism is the distancing of the central school board from the day-to-day world of individual neighborhood schools. And in some major cities such as New York, as much or more funds are now spent supporting central school board bureaucracies than are spent on children's education.

Metropolitan Museum of Art New York's and America's largest art museum. Along with the Louvre in Paris, the British Museum in London, the Rijksmuseum in Amsterdam, the Uffizi in Florence, the Hermitage in St. Petersburg and the Prado in Madrid, the Metropolitan boasts one of the world's finest collections of art. Its enormous collections, special exhibitions, lectures, concerts and educational programs draw more than 4 million visitors annually. Founded in 1870, it opened 10 years later at its present site in Central Park, facing Manhattan's upper Fifth Avenue. Like other great museums that opened in the last decades of the 19th century, the Metropolitan voiced an interest in educating the public, and it has since evolved into one of the art world's most important educative institutions. But the Metropolitan was first and foremost an agency of preservation and research—a repository of the world's great art, operated in the interest pri-

marily of scholars. Indeed, the Metropolitan rejected overtures by Columbia University at the beginning of the 20th century to form a great center of art education, in cooperation with Columbia, the National Academy of Design and the Society of American Artists.

Several factors eventually forced the Metropolitan and similar museums to open their collections to the general public. For one thing, the Metropolitan's original charter was unique for that era in that it was a partnership of public and private interests. Neither sector could, by itself, afford to erect museums comparable to those of Europe. Inasmuch as the general public would ultimately benefit from the educative influence of such structures, the museum's founders convinced the city to donate the land and finance construction of the building, in return for donations of great art from private collectors. The museum remains a city-owned building, standing on city-owned land, and it was and continues to be financed by a combination of public and private funds. Its private board of trustees, with city representation, became a model for other American museums.

It was the public's part ownership that eventually forced museum management to open its doors wider to the general public, especially after World War II, when citizen participation in governmental affairs increased and the civil rights movement made citizens more aware of their rights in every sector of American life. In addition to citizen demands for greater access to the museum, competition from other museums and spiraling operating costs forced the Metropolitan to rely more on patronage from the general public than previously, as well as on the wealthy patrons who traditionally contribute money and art.

Metropolitan Readiness Tests One of the common batteries of tests given to entering kindergartners and first graders to determine their developmental and intellectual readiness

to begin formal instruction in the forthcoming school year. Published by the Psychological Corporation—Harcourt Brace Jovanovich, the Metropolitan Readiness Tests are designed for two levels of test takers: Level I, for students thought to be low in skill development, and Level II, for students who appear to have made normal progress in skill development. Each battery lasts 90 minutes and has six subtests. Level I consists of "Auditory Memory," "Rhyming," "Letter Recognition," "Visual Matching," "School Language" and "Listening." Level II consists of "Beginning Consonants," "Sound-Letter Correspondence," "Visual Matching," "Finding Patterns," "School Language" and "Listening." Each has two optional subtests: "Quantitative Language" and "Copying" in Level I, and "Quantitative Concepts" and "Operations and Copying" in Level II.

The Metropolitan Readiness Tests, along with similar school readiness tests, have come under sharp criticism for often locking young children in or out of programs that can interfere with their normal intellectual and social development. At any given moment, say these critics, a child may be ahead or behind the developmental norm for children of the same age—only to catch up, sprint ahead or temporarily fall behind a month or two later. The permanent placement of a child in any program based on the child's current level of development presupposes a constancy in rates of child development that belies an overwhelming body of evidence to the contrary.

Mexican Americans Those Americans either born in Mexico or of Mexican ancestry and constituting more than 63% of the Hispanic population of the United States. In the more than 175 years ending in 2000, nearly 6 million Mexicans immigrated into the United States, according to the U.S. government. In the 1990s alone, nearly 2 million Mexicans entered the United States legally—more than

25% of all immigrants entering the United States during that decade and about one-third of the total number of Mexicans who had entered the United States in the previous 165 years. At the beginning of the 2000s, there were more than 25 million people of Mexican origin living in the United States, of whom 9 million were born in Mexico. No accurate figures exist for the number of illegal Mexican immigrants who cross the border that stretches from Texas to California. In 2006, the federal government estimated the total number of illegal immigrants of all nationalities at about 11 to 12 million, 60% of whom live in four states: California (3.7 million), Texas (1.7 million), New York (850,000) and Illinois (750,000). Often called Chicanos (a nonpejorative diminutive of the word *Mejicano*), Mexican-American children make up 51% of the student population in New Mexico, nearly 45% in California, about 42% in Texas and more than 30% in Arizona. Most educational statistics, however, are not collated by national origin, only by broad ethnic groups. Mexican Americans are thus lumped with all HISPANIC AMERICANS, whose educational achievement in the United States ranks only slightly above those of non-Hispanic blacks and well below those of non-Hispanic whites in almost all academic areas.

Studies of Mexican-American life tie the low rate of academic success among Mexican-American children to the failure of their families to assimilate into American life to the degree that immigrant groups from Europe have done. Like other immigrant groups, Mexican immigrants have tended to settle in homogeneous American villages and city neighborhoods, or barrios, where they can maintain Mexican ways and teach those ways to their American-born children. Unlike other immigrant groups, the proximity of Mexican Americans to their homeland has also permitted them to travel continually between the United States and

Mexico, where they can renew and sustain the ways of their native country.

Moreover, an endless flow of new immigrants from Mexico—illegal as well as legal—along with relatives, friends and other Mexican visitors, has encouraged the maintenance of the language, social, cultural and religious ties of Mexican Americans to their homeland and discouraged the breaking of those ties and assimilation into American life. Indeed, Mexican Americans continue to have lower naturalization and marriage rates than other immigrant groups. In contrast, immigrants from Europe were isolated from their former customs and languages by distance and cost of travel. They and their children were forced to assimilate.

Michigan The 26th state to join the Union, in 1837, and, from its earliest days, a state that has placed particular emphasis on education. Its public schools rank above average for the United States, and the state-run University of Michigan, founded in 1817, ranks among the most demanding universities academically—private or public—in the United States. The state's earliest schools date back to 1800, when French Roman Catholic missionary Father Gabriel Richard (1767–1832) established schools for Indians and whites in and around Detroit. In 1809, nearly three decades before statehood, Michigan Territorial Law directed each judicial district to start schools and collect a tax for them.

In 1817, the Territorial Council passed one of the most remarkable educational laws in the nation, by creating the Catholepistemiad, or University of Michigania. The ancestor institution of the University of Michigan, the Catholepistemiad was to have been a comprehensive system of education for the state consisting of a network of primary schools, academies, schools, libraries, museums, athenaeums and botanical gardens. All would feed their best students into an umbrella institution of higher

education consisting of 13 departments, governing the range of scholarly studies. Legislated in 1817, the Catholepistemiad never grew beyond the secondary school level, but it did create a unified and comprehensive, primary-secondary school system that other states would take years to build piecemeal.

In 1829, the Territorial Council made universal public education and the construction of schools in each district mandatory. It gave the territorial government the right to inspect and supervise schools and set the length of time each would be open. When it became a state, Michigan immediately established a comprehensive statewide system of public education, from elementary school through university. It was one of the few American states to act so swiftly to institute universal public education.

Although the Catholepistemiad had created a well-coordinated and unified system of primary and secondary education, the funding of high schools—especially high schools that prepared students for university as well as work—became a center of controversy. This reached a climax in Kalamazoo in 1873, when a citizens group filed suit to restrain the school board from spending money on the high school. The courts upheld the school board, saying the legislation of 1817, creating the Catholepistemiad, clearly provided for free public education at both the primary and secondary levels, and gave school boards the “option” to bring “the elements of classical education . . . within reach of all the children of the state. . . .” In upholding the comprehensive character of the Michigan (and, ultimately, American) school system, the courts eliminated the need to build alternative, European-style secondary school systems—one for vocational education, the other for academics.

Michigan has nearly 4,000 public elementary and secondary schools, with more than 1.7 million students, who ranked about average in the nation for academic proficiency. More than

26.5% are minorities and 11.6% live in poverty. Michigan was one of the first states to act forcefully and decisively, and without the impetus of a court order, to end the disparities of school financing based on property taxes. The latter usually provide more money to schools in wealthy districts than in poor districts, where property values are low. Prior to Michigan's action, the courts had found eight states in violation of constitutional guarantees of equal educational rights by using property taxes as a method of financing local education.

Prior to banning the use of property taxes to finance schools, Michigan had financed 68% of the cost of its public schools with property taxes. As a result, the poorest districts had only \$3,200 to spend per pupil in public schools, while the richest districts could spend \$10,000 per pupil from property taxes. By funding schools from the state capital, the state was able to distribute funds more equitably to each school district on a basis of a minimum of more than \$7,000 per student, and narrow the gap between the richest and poorest districts to less than \$2,500 per student.

Michigan has 110 institutions of higher education—15 public four-year and 30 public two-year institutions and 60 private four-year and five private two-year colleges. An innovative collaborative cross-registration scheme between its public two-year and four-year colleges has broadened the scope and reach of higher education. Michigan's nearly 400,000 students at four-year colleges have a graduation rate of about 54%. The state's most academically selective four-year institution, the University of Michigan, has been the center of two major legal conflicts over AFFIRMATIVE ACTION. In one case, the United States Supreme Court upheld the use of race as a consideration for admission to Michigan's law school, but in the second case, involving undergraduate admissions, the Court banned the use of so-called point systems that arbitrarily award specific

values to each of a variety of factors—SAT scores, high school grades, extracurricular activities, gender, etc.—but gave undue weight to race and membership in nonwhite minority groups. The university attempted to compensate for the effects of the court decisions with an aggressive minority outreach program for needy students, with individual grants ranging from \$300 to \$1,500 a year. In November 2006, however, Michigan voters forced the university to abandon its outreach program and all other affirmative action by voting 58% to 42% in a statewide referendum to amend the state constitution with an outright ban on affirmative action in public-college admissions and government hiring. The vote followed similar referenda in California and Washington, and Illinois, Missouri and Oregon have planned similar actions.

(See also *GRATZ V. BOLLINGER*; *GRUTTER V. BOLLINGER*.)

microfiche A transparent index card for carrying the equivalent of up to 270 photo-reduced pages of books, periodicals and other printed materials. Rendered all but obsolete by the computer, the microfiche measures 4 inches by 6 inches and represented a major advance in storage and retrieval of printed materials in the post-World War II era. It carries row upon row of tiny images, which, when placed on a microfiche reading device, are enlarged and projected onto a self-contained screen, where they can be easily read.

microfilm A 35 mm filmstrip each of whose frames contains a photo-reduced transparency of a page of text from a book, periodical or other printed material. Like the MICROFICHE, microfilm represented a major breakthrough in library equipment by compressing enormous amounts of printed materials in a tiny space. Microfilm can be read on a special electric reader that enlarges and projects each frame

onto a reader screen. Microfilm readers are usually equipped with copying devices to produce printed copies of each screen.

microteaching A miniaturized exercise in teaching, used in training student teachers. Developed at Stanford University, the microteaching technique calls for a student to prepare a lesson covering but one, limited aspect of a subject and requiring but one teaching technique, e.g., direct questioning or eliciting student debate. The student teacher then conducts the lesson with a small group of learners. The lesson is videotaped in its entirety and then reviewed critically by the student teacher and his or her instructor.

middle school A freestanding school housing pre-adolescents and early adolescents in the "middle" years between childhood and adolescence. A descendant of the traditional JUNIOR HIGH SCHOOL, the middle school years vary from community to community, according to available space, school budgets, enrollment levels in each grade and school board and faculty philosophy. Middle schools may be limited to seventh and eighth grades (the traditional junior high school configuration) or comprise fifth through eighth, fifth through seventh, sixth through eighth or sixth through ninth grades.

Middle schools continue to do the academic work of traditional junior high schools by preparing preadolescents for work at more advanced levels. They are, however, organized differently to deal better with and adapt to the special developmental, intellectual, biological, social and physical needs of the early adolescent. Thus, the well organized middle school has a much higher ratio of guidance counselors to students than high schools to permit youngsters to obtain as much individual attention as they need.

Classes are usually organized and conducted differently from those of either elementary or secondary school, with classes organized

into far smaller groups. One common technique for teaching is the interdisciplinary team approach, involving a middle ground between the self-contained classroom of elementary school, with the single, generalist teacher in charge all day, and the constant, hourly change of classrooms and teachers characteristic of high school.

Instead, many middle schools assign small groups of students to two or three teachers, with one acting as both homeroom teacher and teacher of one or two related subjects—math and science, for example—and each of the other teachers handling their specialties. At times, two or even three teachers might join together in teaching a class cooperatively, relating the lesson to each of their specialties—the history of Egypt, for example, with the geometry of the pyramids, the writing of hieroglyphics and the origins of language, and the development of perspective in art. Specialist teachers in art, music, physical education and other subjects give students a taste of the departmentalization and intellectual demands of high school, but the intimacy and individual attention afforded by small class groups and interdisciplinary team teaching provide students with the family-like security of elementary school.

migrant education The formal schooling of children of migrant agricultural workers with no permanent residence. Migratory workers follow the growing seasons, living in temporary, usually substandard housing on the farms they happen to be planting or harvesting. Like their parents, the children of migratory workers seldom remain in one state or community for an entire school year—indeed, seldom beyond one season.

There are an estimated 450,000 to 500,000 migrant workers, with an estimated 200,000 school-age children. About 80% live in California, Florida and Texas in off-seasons, but their

migratory streams carry them through at least a dozen other states, including, Virginia, Maryland, Delaware, Pennsylvania, New Jersey, New York, Ohio, Iowa, Michigan, Wisconsin, Washington and Maine. The figures, however, are unreliable and may be underestimated, because of the difficulty of determining the number of illegal migrant farm workers not reported to tax, census and other authorities by their employers. In general, the annual migration of migrant workers in the East begins with the citrus crop in Florida in winter, moves northward to New York to harvest fruit in August, and to Maine to harvest potatoes in September. In the Midwest, the migratory flow begins in Texas in spring and fans out to the north-central, mountain and Pacific Coast states, harvesting fruits, vegetables, sugar beets and cotton. A third migratory flow begins in southern California and moves northward through the Pacific Coast states, harvesting fruits and vegetables. The average work year for migratory workers ranges from 82 to 150 days, depending on the region. The average annual income for a family of four is between \$20,000 and \$25,000, with per capita income ranging between \$3,000 and \$12,000, depending on the worker's age and the weather conditions.

Because migrant workers are paid on a piece basis, as many family members as possible work the fields. Few families can afford to let their children attend school, and most children, some as young as five years old, work the fields too. Although such child labor is illegal, local law enforcement authorities either overlook it or cite technicalities in state law that permit underage children to work for their parents in agriculture. Technically, the migrant workers are independent, agricultural entrepreneurs, and their children work for their parents, not the farmer who hires the parents. Of those children not forced to work the fields, many often fail to attend school because of their status as illegal aliens and the danger that their

families might be deported from the United States. Even migrant children living in the United States legally are often barred from local schools because of local or state residency requirements. In communities where migrant workers' children are permitted to attend schools, many are too ill-clothed to present themselves. Making matters worse for such children is the high rate of illiteracy among their parents, who are incapable of compensating their children by providing some cultural advantages at home.

The net result is that children of migrant workers obtain little or no education. Fewer than 55% of migrant worker children graduate from high school. In the 1970s, newspaper exposes of scandalous living conditions in migrant worker camps, along with exploitation of migrant child labor, provoked Congress to enact a special program whereby Washington provided all necessary funds for states and local communities to establish and operate special educational facilities for migrant workers, both adults and children. The program has remained largely inoperative and ineffective, typically because of the opposition of local residents to integrating children of migrant workers in local schools.

mild/moderate learning disorders A technical classification of half the roughly 11.5% of the American student population formally diagnosed as having learning and behavioral disorders. The symptoms of such disorders include poor motivation, memory and retention skills. Students formally diagnosed with mild/moderate learning and behavioral disorders score one or two standard deviations below the average on norm-referenced assessment tests. About 6% of primary- and secondary-school children fall into this category and are, therefore, eligible for free special education under the EDUCATION FOR ALL HANDICAPPED CHILDREN ACT OF 1975. Such chil-

dren must, under the law, be “mainstreamed,” that is, they must remain in regular classrooms for most of the school day. Public schools must, however, set aside time to provide additional services and special education. About 7% with less serious learning and behavioral disorders do not qualify for such services and special education.

military education Formal and informal schooling provided by the military to service personnel. The scope of military education has varied widely since the founding of the Republic, depending on the size and needs of the armed services. The first formal military education began in 1802 with the establishment of the U.S. MILITARY ACADEMY at West Point, New York, but the academy remained nothing more than a training ground until the appointment of Sylvanus Thayer (1785–1872) as superintendent in 1817. A graduate of Dartmouth College and an engineer, Thayer transformed West Point into a superior educational institution during the 16 years of his superintendency. In addition to establishing a strict system of discipline and establishing a hierarchal corps of cadets, he introduced a curriculum that combined the range of arts and sciences with engineering and military science. Among the required courses were engineering, including drawing and mathematics (Thayer had worked on fortifications in the Army Corps of Engineers); French (necessary because most engineering and mathematics textbooks were written in French); chemistry; natural philosophy; geography; history; and moral philosophy. Students attended year round and took part in military exercises at summer encampments.

When the U.S. NAVAL ACADEMY was established at Annapolis in 1845, it adopted most of what by then had become known as the Thayer system. The U.S. COAST GUARD ACADEMY, founded in 1876, adopted a slightly modified Thayer system, as did the U.S. Air Force Acad-

emy, founded in 1954. (Although the U.S. MERCHANT MARINE ACADEMY was founded in World War II as a fifth service academy, its program subsequently became oriented almost entirely to training for service in the civilian merchant marine.)

Military education remained relatively unchanged until the Civil War, with all officers trained and educated at the military and naval academies, and enlisted men trained and educated “on the job” by more experienced peers and noncommissioned officers. The need to expand the Union Army during the Civil War, however, spawned congressional passage of the Morrill Act in 1862, creating LAND-GRANT COLLEGES that included in their curricula courses in military science and tactics and military training. The goal was to prepare a ready reserve of military officers to complement those emerging from West Point and Annapolis.

The disasters of the Civil War exposed the need for more specialized military education, as well as advanced training and graduate education for high command positions. The result was the creation of specialized infantry, ordnance, quartermaster, engineer and artillery schools, along with an ARMY WAR COLLEGE, an Army General Service and Staff School (later, the COMMAND AND GENERAL STAFF SCHOOL) and a NAVAL WAR COLLEGE. In addition, the Naval Academy created its own postgraduate division, with advanced courses in ordnance, mechanical engineering, radio, shop management, naval architecture and civil engineering.

Although Congress also mandated basic education for enlisted men to eradicate illiteracy and innumeracy, the program was ignored, and most enlisted men continued to learn their trade from peers and noncommissioned officers. Indeed, formal literacy training in the Armed Services did not begin until World War I, when the military found that fully one-quarter of its draftees were illiterate. Although attempts were made to combat illiteracy during the war, little

progress was made, and most illiterate conscripts were assigned to menial chores.

In 1919, after a general armistice had ended the fighting in World War I, General John J. Pershing (1860–1948), commander of the American Expeditionary Forces, was faced with the problem of preventing boredom among his idle troops. He decided to establish Army post schools to provide elementary and secondary education to all soldiers who wished to enroll. Forced to keep his officers occupied as well, he also established an AEF college staffed by officers and enlisted men with appropriate academic training and teaching experience. The University of the American Expeditionary Forces in Beaune, France, opened on March 19, 1919, and enrolled 6,000 students in 200 courses.

Drastic cuts in troop strength in 1920 and 1921 ended such education until 1942, when World War II forced an enormous expansion in the U.S. Armed Forces and advancing technology required that as many as 90 of every 100 men have specialized training. The result was a vast educational effort that not only made illiterates literate in a few weeks, but also, within months, turned them into automobile and aircraft mechanics, carpenters, bookkeepers, dental hygienists, medical corpsmen and pharmacists mates, quartermasters, signalmen and torpedomen. Advanced programs produced engineers, meteorologists, navigators, bilingual translators, dentists, physicians and surgeons and other skilled professionals. The program was established through cooperative arrangements with civilian institutions such as vocational and technical schools, colleges and universities. All agreed to operate accelerated programs the year round at government expense, granting bachelor's, master's and doctoral degrees (all paid for by the U.S. military) at rates unprecedented in the history of education. By the end of World War II, the U.S. military was operating the largest educational establishment in world history. It continues to

do so to this day, now providing most of its technical training in on-base facilities.

The Armed Forces now require a high school diploma or its equivalent (GENERAL EDUCATIONAL DEVELOPMENT PROGRAM) for admission, along with minimum, predetermined scores in a battery of standard written examinations. The services then provide 12 broad categories of technical training in nearly 2,000 occupations that require no college degree but, with the exception of combat training, are useful in post-service, civilian life:

1. Human services: recreation-oriented occupations.
2. Media and public affairs: musicians, photographers, camera operators, graphic designers and illustrators and foreign language interpreters and translators.
3. Health care: medical laboratory technologists and technicians, radiologic technologists, emergency medical technicians, dental assistants, pharmaceutical assistants, sanitation specialists and veterinary assistants. Military training as a health-care specialist automatically entitles a person to civilian certification.
4. Engineering, scientific and technical occupations: mapping technicians, computer programmers, air traffic controllers and radio and radar operators.
5. Administrative, clerical and functional support jobs: accounting clerks, payroll clerks, personnel clerks, computer programmers, computer operators, accounting machine operators, chaplain assistants, counseling aides, typists, word processor operators, stenographers, storekeepers and other clerical jobs.
6. Service occupations: military police, correction specialists, detectives, firefighters, food preparation and service.
7. Vehicle and machinery mechanics: maintenance and repair of aircraft, missiles, conventional and nuclear-powered ships, boats and landing craft, trucks, earth-moving equipment, armored vehicles and cars.

8. Electronic and electric repair: repairs of radio, navigation and flight control equipment, telephones, teletype and data processing equipment.
9. Construction trades: carpenters, construction and earthmoving equipment operators, metalworkers, machinists, plumbers, electricians, heating and air-conditioning specialists and every other building trades occupation related to construction and maintenance of buildings, roads, bridges and airstrips.
10. Machine operating and precision work: laboratory technicians, opticians, machinists, welders and shipfitters.
11. Transportation and materials handling: truck drivers, air crews, seamen, warehousing and equipment handling specialists, inventory maintenance, and all jobs associated with operation of transportation equipment, including trucks, ships, boats, airplanes and helicopters.
12. Infantry, gun crews and seamen specialists: munitions handling, demolition, ship operations.

In addition to technical training, the Armed Forces continue to offer officer candidates four years of academic education leading to bachelor's degrees at accredited colleges and universities offering Army, Navy and Air Force Reserve Officers Training Corps programs. Moreover, the services provide professional training through service-sponsored medical, legal and engineering education at accredited medical schools and law schools. All such officer training and service-sponsored higher education entails multi-year service commitments.

Miller Analogies Test An examination made up of 120 verbal analogies of increasing complexity and designed to measure scholastic aptitude of graduate and professional school applicants as well as applicants for high-level executive positions in industry. Available in parallel forms for industry, graduate school and professional school, the test is primarily a

measure of verbal skills. It lasts 50 minutes and is made up of analogies drawn from virtually every academic discipline. The test was developed by W. S. Miller at the University of Minnesota in 1926.

Milliken v. Bradley A controversial 1974 U.S. Supreme Court decision that effectively ended *BUSING* between independent school districts to achieve racial segregation. Often called the "Detroit Case," the decision overturned lower court rulings that had consolidated Detroit's school districts with 53 districts in neighboring suburban communities to form 15 new districts, each made up of two suburban districts and one Detroit city district. At the time, the student population of Detroit's city schools reflected the racial makeup of the city itself and was 70% black. The lower courts had ruled that Detroit's schools could not be truly desegregated unless their racial composition reflected the racial composition of the greater metropolitan area rather than that of the city alone.

The U.S. Supreme Court, however, ruled that the lower courts could not arbitrarily ignore city boundaries and district lines and usurp legislative powers to create those boundaries and lines. Only the state legislature had the constitutional right to do so. Moreover, the High Court said the lower court action violated the basic principle of U.S. public education. "No single tradition in public education," said the Court, "is more deeply rooted than local control over the operation of schools: local autonomy has long been . . . essential both to the maintenance of community concern and support for public schools and to quality of the educational process. . . ." The consolidation of historically independent school districts into a single super district would produce an array of new problems involving financing and educational policy making. In the absence of a complete restructuring of the laws of Michigan relating to school districts, the proposed interdistrict remedy

would convert the federal district court into “a de facto ‘legislative authority’ and . . . ‘school superintendent’ for the entire area.”

The problem of unconstitutional, racial segregation in the city of Detroit, said the Court, had to be resolved within Detroit proper by better integration of whites and blacks within the city itself. “Disparate treatment of white and Negro students occurred within the Detroit school system and not elsewhere, and . . . the remedy must be limited to that system. The constitutional right of the Negro respondents residing in Detroit is to attend a unitary school system in that district. Unless petitioners . . . arranged for white students residing in the Detroit district to attend schools in Oakland and Macomb counties, they were under no constitutional duty to make provisions for Negro students to do so.”

(See also INTEGRATION.)

Mills v. District of Columbia Board of Education A landmark 1972 class-action suit that established the constitutional right of handicapped children to free public school education. Together with another case, *PENNSYLVANIA ASSOCIATION FOR RETARDED CHILDREN V. COMMONWEALTH OF PENNSYLVANIA*, Mills opened the way toward the establishment of zero-rejection policies of American public schools. The suit was filed on behalf of seven disabled children of normal intelligence who had been prevented from enrolling in local public schools. The decision not only ordered the district board of education to admit the children and provide them with free, unfettered education, it also ordered the board to advertise the availability of such free education to all disabled children.

Mills, along with the “PARC” decision a year earlier in Pennsylvania, effectively stripped public school systems of the right to pick and choose their students and reject those they decide they cannot or will not educate. In 1971, the Pennsylvania Association for Retarded

Children (PARC) had sued the state to force it to open public schools and offer free education to all the state’s children, including the retarded. Mills and PARC set the stage for Congress to pass the EDUCATION FOR ALL HANDICAPPED CHILDREN ACT OF 1975, making it mandatory for all United States public schools to provide free education for all children, regardless of their handicaps. The act provided federal funds to ease the burden of local communities for such responsibilities.

minicourse An unconventionally short course of study covering a limited amount of material in time spans ranging from several days to several weeks, but never lasting as long as conventional 15-week, one-semester courses. Usually carrying at most a single course credit, minicourses are almost always optional. Offered at the high school, college, graduate school and adult education level, minicourses provide instruction in academic and technical areas that are either not specifically covered (or covered superficially) by traditional, full-semester courses or do not require that amount of time. Thus, learning to operate a computer for word processing might be offered as a high school minicourse, as opposed to more complex courses designed to teach computer programming or make students more comprehensively computer literate.

minimal brain (or cerebral) dysfunction A learning or behavior disorder traceable to a specific, albeit minor, lesion in the brain. Almost all standard learning disorders, including DYSLEXIA, and almost all standard behavioral disorders, including ATTENTION DEFICIT DISORDER, can be the result of minimal brain or cerebral dysfunction, but the reverse is not necessarily true, as learning and behavioral disorders may result from causes other than brain lesions.

minimum competency tests An obsolete battery of standardized tests measuring read-

ing, writing and computational skills, skills in language arts and, often, other academic skills, of children from kindergarten through twelfth grades. Used to determine a student's remedial needs as well as eligibility to be promoted to higher grades or to graduate high school, minimum competency tests were required in the vast majority of states and, depending on the state, were given annually, every other year or every three years. Designed in the 1970s to help wipe out ILLITERACY and raise national education standards, they usually proved nothing more than labor-saving devices for teachers who could not design their own tests for students each year.

Originally a target of criticism from parents who feared their children might be held back indefinitely, the tests proved ludicrously simple in states with poor quality education and, as their name suggests, less than challenging even in states with high quality education. Moreover, many teachers were found to have adapted their instructional methods to TEACHING THE TESTS and thus assuring each student's passing the competency tests. In the 1990s, educators across the United States launched far-reaching educational reforms based on the GOALS 2000 program. The result was a system of OUTCOME-BASED EDUCATION, with students tested each year for proficiency levels measured by national standards.

Minnesota The 32nd state to join the Union, in 1858, and from its origins one of the states most dedicated to high-quality public education. Settled originally by New Englanders, Scandinavians and other groups known for their traditional stress on education, Minnesota made a strong commitment to public education in its constitution, which declared, "The stability of a republican form of government depending mainly upon the intelligence of the people, it is the duty of the legislature to establish a general and uniform system of public

schools." Minnesota has more than 2,400 public elementary and secondary schools, with about 845,000 students, of whom 18% are minority students and 8% live in poverty. The system ranks second only to Massachusetts in quality of education. Student academic achievement scores consistently rank among the highest in the United States, with all age groups scoring second in the nation in 2005 in mathematics proficiency testing and ninth in reading proficiency. The state has 12 public and 49 private two-year colleges, with total enrollment of about 235,000 students and a graduation rate of 55%. Minnesota also has 40 public and 26 private two-year colleges. The state has long had a unique policy that every student should be able to attend college within 35 miles of home and has constructed its system of public higher education accordingly.

Minnesota Board for Community Colleges v. Knight A 1984 U.S. Supreme Court ruling that gave the state the right to certify a single organization as the representative of college faculties in state schools and bar nonmembers of such organizations from policy discussions. Basically a labor dispute, the case began after state law gave the Minnesota Community College Association the exclusive right to negotiate with the state government on such matters as community college curriculum, accreditation and student affairs. The National Right to Work Committee challenged the law on behalf of faculty who had refused to join the association. Although a lower court ruled that the law had deprived nonmembers of the First Amendment right of free speech, the Supreme Court reversed the decision, saying that government has the right to call on anyone it wants to help make policy decisions. To listen to every citizen and every point of view before making a decision, the Court said, would produce a costly and endless process that, in the end, would lead to stalemates in decision making.

Minnesota School Mathematics and Science Teaching Project (MINNEMAST) A pioneer effort developed at the University of Minnesota in the mid-1960s and sponsored by the National Science Foundation that produced a now-standard kindergarten-through-third grade curriculum that interrelates and integrates mathematics and science.

minority education Historically in the United States the formal instruction of members of racial, ethnic and national groups other than the white Anglo-Saxon Protestants who, for the first four centuries of European life in North America, constituted a majority of the population. Until the end of the Civil War, in most of the South it was a violation of state law, punishable by fines and imprisonment, to teach blacks literacy. Until the last half of the 20th century, minority groups were denied equal access to education, either by custom or state law. Asians and American Indians were barred from most public schools, and, along with nonwhite minorities, most Jews and Catholics were either denied admission to most private educational institutions or admitted only in small quotas.

In 1954 the U.S. Supreme Court declared racial SEGREGATION unconstitutional, and a series of federal and state civil rights laws that followed over the next 20 years gave all American children equal access to both public and private education. Academic achievement levels of minorities improved dramatically. By 1990 Asian high school students tested the same as white students in English, 1% higher in history, 1.6% higher in science and 5% higher in mathematics. Although they constituted less than 1% of the elementary and secondary school population, they made up 4.2% of the students who went on to college. By 2002, Asian Americans continued thriving academically, accounting for 6.4% of the college population. They scored only 4% below white

students on average on the verbal portion of the college SCHOLASTIC ASSESSMENT TESTS in 2005 but 8.9% higher on the math tests.

Although the academic levels of other minority groups did not reach those of Asian Americans, the end of racial discrimination produced substantial and often dramatic gains for various groups. With the doors open to higher education and industrial prosperity producing record numbers of new jobs for college students, high school drop-out rates of African Americans plunged from 30% in 1960 to just under 11% in 2002. By then, nearly 80% of African Americans 25 years old and over had completed high school, compared with only 21.7% in 1960, and 17.2% had completed four or more years of college, compared with 3.5% four decades earlier. By comparison, 41% of whites had completed high school in 1960—twice the percentage for blacks; in 2001, 88.7% of whites completed high school—only nine percentage points more than blacks. The disparity in college completion rates was far wider, with 29.4% of whites completing four or more years of college.

Hispanics fared far worse—largely because of the continual influx of poor, less educated immigrants who pulled down academic proficiency averages for the group as a whole. Although the drop-out rate for Hispanic high school students fell more than 20% from 1972 to 2002, 27% of Hispanic students continued to drop out of high school, and only 57% of Hispanics 25 years old or more had high school diplomas in 2002—far more than the 44.5% three decades earlier, but hardly an acceptable figure. Only about 11% of Hispanics had completed four or more years of higher education in 2002, compared with 7.6% in 1972, the first year in which Hispanics constituted a statistically large enough minority to measure. American Indians have fared only slightly better than Hispanics since the passage of antidiscrimination legislation, with 71% of American Indians

and Alaskan natives 25 or older having earned high school diplomas by 2000 and 11.5% having earned bachelor's degree or higher. Of all minorities, Asian Americans have fared the best since the passage of antidiscrimination laws. More than 80% have high school diplomas and 44% have earned college degrees.

Despite noteworthy improvements, blacks and Hispanics, unlike Asians, continued to lag substantially behind white students in academic proficiency. Reading proficiencies of black and Hispanic high school students were about 10% and about 8.5%, respectively, below that of whites, while math proficiency of black students was 11% below that of white students and math proficiency of Hispanic high school students was an average of 7% below whites. Both minorities lagged even farther behind in science proficiency—largely a reflection of the lack of up-to-date laboratory facilities and qualified science teachers in inner-city schools. Recent tests show black high school freshmen 14.5% less proficient in science than whites and seniors 17% less proficient. Hispanics were 10% less proficient than whites. Minority students fare no differently on college admissions tests. Black SAT scores are 18.6% and 19.6% lower, respectively, than scores of white students on the verbal and mathematics portions; Hispanics score 13.6% and 13.7% lower, respectively, than whites on the verbal and mathematics portions; and Asian Americans score the same as white students on the verbal portion and more than 8% higher on the mathematics portion. American Indians score about 8.5% lower than whites on the verbal portions of the SATs and 8.1% lower on the mathematics portions.

Despite 30 years of aggressive affirmative-action programs, the achievement gap has remained a somewhat intractable problem that has drawn the growing attention of educators. The most recent longitudinal studies by the U.S. Department of Education traced the gap to a wide range of factors:

- Poverty. About 30% of black school children and more than 27% of Hispanic children live in poverty, compared with 12.8% of white children and 11% of Asian and Pacific Islanders.
- Lack of adequate parenting during the preschool years, when basic word and number skills are learned
- Less access to preschool and day-care programs
- De facto segregation. More than two-thirds of all black students and 75% of Hispanic children attend public schools in which more than half the student body is nonwhite, thus clustering low achievers with other low achievers and depriving them of exposure to educationally advantaged children
- High mobility. Poor families move more frequently than wealthier families, thus forcing children to shift schools and disrupt educational continuity more often
- Language problems. Hispanic children learn Spanish in infancy; many American Indians learn their native tongues before they learn English; and many poor African Americans grow up speaking BLACK ENGLISH, thus postponing their access to proper English-language instruction beyond the peak language-learning years. The language problem does not, however, seem to have any lasting adverse educational effects on Asian children
- Poor teacher quality. Schools in poor, high-crime neighborhoods draw the most under-qualified teachers
- The so-called "summer effect." Poor children tend to fester during the summer, while wealthier ones go to summer camps, take vacations and participate in library and other learning activities
- School finances. Low inner-city property values yield correspondingly low property taxes, on which schools are dependent for revenues

Whatever the proportionate effects of each of these factors, the achievement gap is clearly evident in standardized test scores of beginning kindergarteners entering school, with black children scoring 16% lower than white children in reading tests and 21.6% lower in math tests. Hispanic children do equally poorly, scoring

15% lower than whites in reading and 17.6% lower in math. American Indian and Alaskan Native eighth graders scored 8.1% lower than whites in reading and mathematics in 2005 but 2.5% higher than black students and 1.2% higher than Hispanics. In contrast, Asian kindergartners scored an astonishing 11.6% higher than white children in reading and about the same as white children in math.

A year of kindergarten only slightly narrows the gap between minorities and whites. First grade black children score 14% lower than whites in reading, Hispanics 10.6% lower, and Asian-American children 7.7% higher than whites. Black first graders score 18% lower than whites in mathematics, Hispanics 12% lower, and Asians the same as white children. After they have finished first grade, black children remain 13% behind whites in reading and 14% behind in math, while Hispanics remain 9% behind in reading and 8% behind in math. Asian-American children perform at the same level as whites in both reading and math.

With minority students accounting for more than 40% of the American primary and secondary public school student population—more than 50% in some states—a number of efforts were under way to improve the stubbornly low quality of minority education. Some have proved less successful than others, depending on the minority group. BILINGUAL EDUCATION, for example, was introduced across the nation to instruct children in their native languages while teaching them “English as a second language.” The costs of bilingual education, however, proved exorbitant for the results. Indeed, spending on such education ballooned to \$600 million a year, while long-term studies in cities such as New York found that more than 90% of students who started bilingual education were unable to pass English-language tests three years after beginning bilingual instruction. As computer use became essential in education and in the job market and with

English the language of 95% of all Internet communications, grassroots parent rebellions erupted across the nation—with minority parents leading the way, demanding that public schools teach their children English fluency. In 1995, California and other states passed laws banning bilingual education and establishing English as the official state language. A year later, a group of economically deprived Hispanic parents voted to boycott local elementary schools in Los Angeles until authorities abandoned bilingual education and taught their children in English, to improve their children’s long-term chances of attending college and getting jobs.

As for combating the effects of de facto racial and ethnic segregation, some cities have passed SCHOOL VOUCHER laws allowing students to transfer to school districts with better schools, but the question of SCHOOL CHOICE remains mired in legal complications and has yet to prove its effectiveness for academically deprived minority students.

In the belief that the poverty factor is the most important cause of low-quality minority education, however, many states have eliminated the financing of education with property taxes. Instead, they are simply appropriating funds at the state level and distributing the monies to all public schools on a per capita basis, thus lowering the amounts going to wealthy districts and raising the amounts for poor districts. Their hope is that the traditional supplementary, voluntary contributions of wealthy parents will prevent quality of education in wealthy districts from deteriorating.

(See also AFRICAN-AMERICAN EDUCATION; ASIAN AMERICANS; DESEGREGATION.)

mirror reading A disability that causes the individual to perceive some letters and parts of words as the reverse of what they are—indeed, as if they are reading the mirror image of the printed letter or word, such as *d* instead

of *b*, *p* as *b*, *lap* instead of *pal*. Mirror reading is a form of DYSLEXIA and what Dr. SAMUEL ORTON, the pioneer researcher in LEARNING DISABILITIES, called strephosymbolia (twisted symbols).

miscue Jargon for oral reading error. The term is often used to refer to specific types of errors, such as substituting one word for another, inserting a word that is not in the printed passage, omitting a word and inability to pronounce a word. Some teachers count and record miscues of individuals to identify reading disabilities, but the technique has proved invalid and unreliable.

missionary education movements In the United States, organized efforts by religious (usually Protestant) leaders, their churches and their followers to provide academic instruction while simultaneously converting students to Christianity. Missionary education movements in the New World date back to the arrival of the first settlers in the Americas and, until the late 19th century, missionaries and their churches controlled almost all secular education in the United States. To this day, they continue to press against the barriers that separate church and state with demands for introduction of prayer and religious instruction in state-controlled public schools.

Among the earliest settlers in the Americas were ministers charged with educating the young, a process that included religious indoctrination as well as enough instruction in one's "letters" to read the Scriptures. Most colonial ministers limited their educational efforts to their own parishes, but there were some who deeply believed in their churchly obligations to "go forth and teach all nations." Of the latter, most believed deeply that American Indians hungered for the gospel and that the "noble savage" needed only to be shown the way to the ordered life of Christian civilization.

As early as 1612, Alexander Whitaker successfully converted the captured Indian princess Pocahontas in Virginia and, after rejoicing over the "innate sense of piety and civility" of the natives, called on the English church to establish a massive missionary program in the colonies. After the baptized Pocahontas (renamed Rebecca) visited England and succeeded in charming the king and queen, the Crown agreed to establish a HENRICO COLLEGE, in Virginia, but an Indian massacre in 1622 ended the project and, to all intents and purposes, all southern-based missionary efforts. Henceforth, southern colonists were bent on establishing economically viable plantations, based on moving Indians off the land—by slaughter if necessary—and exploiting slave labor. All missionary efforts in the South were directed toward educating white children only. Although baptism of blacks was permitted, the Virginia general assembly ruled in 1667 that the "conferring of baptism doth not alter the condition of the person as to his bondage or freedom." For the next two centuries, education of slaves was forbidden by law in the South.

In New England, the problem of would-be Puritan missionaries was different from that of the Virginia Anglicans. Puritans insisted that conversion include not only baptism, but also the experience of "saving grace" that came only with a thorough knowledge of the Scriptures. Any missionary activity, therefore, included literacy training—a factor that would combine academics with all future missionary work emanating from the North. In 1663, Rev. JOHN ELIOT of Roxbury translated the Bible and published an Algonquian edition and, together with Rev. Thomas Mayhew, Jr., of Martha's Vineyard, began efforts to convert Indians to the Christian faith and to Puritan "civilization," including social customs, dress, conduct and laws.

By 1652, Eliot and Mayhew were establishing entire "praying towns" populated by Christianized Indians, and Puritan leaders were so

enthusiastic that they convinced Parliament to create the Society for Propagation of the Gospel in New England. After the Restoration, the society continued its work as the COMPANY FOR THE PROPAGACION OF THE GOSPEL IN NEW ENGLAND, and the Parts Adjacent in America, which bought clothing, tools and building materials for Indians; paid ministers, schoolmasters and civil agents to work among the Indians; financed the printing of an “Indian Library” of Scriptural and inspirational texts that Eliot had translated into Algonquian; and, in its optimism, even financed construction of an Indian College at HARVARD COLLEGE. The Indian College failed for lack of qualified students, but the missionary efforts among the Indians did not. By 1675, an estimated 2,500 Christian Indians, or about 10% of the native population, lived in the praying towns of the Massachusetts Bay Colony and on the islands of Martha’s Vineyard and Nantucket. Despite their sympathy with the English colonists, King Philip’s War (of 1675–76) produced enough suspicion of Indian sincerity to end effective missionary efforts among them. In the absence of Virginia-style laws, Eliot himself turned toward the task of converting northern black slaves, but his efforts failed.

In 1701, the missionary education movement in the colonies took a new direction, concentrating on preventing the spread among white colonists of atheism, infidelity to the Crown and the “popish superstition and idolatry . . . [of] divers Romish priests and Jesuits.” To that end, King William created a new missionary organization, the SOCIETY FOR THE PROPAGATION OF THE GOSPEL IN FOREIGN PARTS (SPG), which launched the most ambitious educational effort of the 18th century.

SPG established 169 missionary stations throughout the colonies, sending more than 80 schoolmasters and 18 catechists to teach reading, writing and calculating to thousands of children of all nationalities. SPG distributed Bibles, prayer books, devotional works and

school texts in English, French, German, Dutch and even Indian dialects in an effort to bring education to all and convert all to Anglicanism. SPG recruited French, Scottish, Irish, Welsh and other non-English schoolmasters in an effort to achieve ethnic matches between teachers and students, thus easing the task of conversion. SPG’s control over education—and its efforts to Anglicanize colonials and assure loyalty to the Crown—ultimately bred resentment among many colonial leaders. “Is it not enough that they persecuted us out of the Old World?” asked the liberal Boston minister Jonathan Mayhew in a 1763 denunciation of SPG. “Will they pursue us into the New to convert us here?—compassing sea and land to make up proselytes. . . .”

The American Revolution brought an end to SPG influence and activities—and to most foreign missionary educational movements—in what became the United States. Although Roman Catholic JESUITS had established a school in Maryland and missions in French-controlled areas of the Northeast and Spanish-controlled areas of Florida, New Mexico and California, their influence in the English-speaking areas was nil, and it remained negligible in the United States of the 18th and 19th centuries.

That is not to say that missionaries abandoned efforts to proselytize. Indeed, virtually every Christian sect had small armies of missionaries traveling the new nation attempting to win converts. But by then, education, such as it was, had become the purview of the local church, and whatever minister ran that church also educated those children of the community that could afford time off from work—and a small stipend for the minister—to attend.

Opportunities to win converts to other sects by establishing new schools existed only on the frontier, where no churches had yet been established. To that end, a host of missionary societies sent representatives fanning out across the rural areas of the North and South and along the expanding western fron-

tier. An evangelical fervor swept across the United States following the Revolutionary War. To the religious, God himself had decreed American independence, and they now believed the “millennium” was at hand. Churches everywhere formed missionary groups to “spread the word”—the First Day Society in Philadelphia, the New York Missionary Society, the Missionary Society of Connecticut, the Massachusetts Missionary Society.

In 1810, the first national organization appeared—the AMERICAN BOARD OF COMMISSIONERS FOR FOREIGN MISSIONS—that coordinated efforts of the Congregational churches of Massachusetts and Connecticut and the Presbyterian churches of New York, New Jersey and Pennsylvania. In 1815, the AMERICAN EDUCATION SOCIETY was founded in Boston, followed by the AMERICAN BIBLE SOCIETY a year later. The American Sunday-School Union was founded in 1824, and in 1826 the AMERICAN HOME MISSIONARY SOCIETY was formed. Together, these organizations formed a collaborative missionary movement, often called “Presbyterial,” that united Congregationalists, Presbyterians, Episcopalians, Methodists, Baptists and Friends in the single goal of Protestantizing Americans by establishing schools in communities where there were none and, through teaching, raising a generation of Protestant American children. To this end, they had the concerted help of hundreds of ministers and pious lay teachers who had established elementary schools, academies and colleges throughout the Northeast to educate the children of the wealthy. All were centers of vigorous religious life and activity, as well as the heart of the American educational system throughout the first three decades of the 19th century. Protestantism permeated every aspect of education, including the universally used *First Reader* and *Second Reader* by WILLIAM HOLMES MCGUFFEY, published in 1836. They and other texts turned secular heroes of the American Revolution such as George Wash-

ington into biblical figures and defenders of the cross.

By 1836, education in the United States taught children of a new trinity made up of a Christian God, a Christian American man and a Christian American nation. Although the CONSTITUTION OF THE UNITED STATES had mandated a separation of church from the central government, it said nothing about any separation of church and the individual states. Indeed, only seven of the states had disestablished religion by 1783, and the remaining six continued to mandate public tax support for teachers of the Christian religion. It was not until 1833 that the last state—Massachusetts—disestablished religion. It was HORACE MANN who declared war on the Protestant clergy and led the fight for disestablishment. Three years later, he stripped the clergy of control over the state’s common schools by convincing the state legislature to establish the nation’s first secular public school system in Massachusetts. In fact, he was responsible for launching the public school movement, which, as it gained momentum, would see secular public school systems established in every state. Although this movement ended direct control of public education by missionary groups, indirect control continued to be maintained throughout most of the 19th century via the Protestant teachers who dominated the public school teaching profession. Indeed, Protestant influence was so pervasive in the 1870s that the Roman Catholic Church decreed the establishment of a complete Roman Catholic educational system, from kindergarten through university, to prevent Protestantization of their members’ children in American public schools.

In the 1920s, missionary education movements attempted to legislate mandatory teaching of the infallibility of the Bible and outlaw the teaching of Darwin’s theory of EVOLUTION in the public schools. Although they succeeded in obtaining passage of such laws in several

southern states, those and similar laws were later declared violations of the ESTABLISHMENT CLAUSE of the FIRST AMENDMENT mandating a separation of church and state. Although a series of subsequent court decisions reaffirming separation of church and state gradually weakened Protestant influence over public school education throughout the rest of the 20th century, various Protestant sects continue to influence public education through elected school-board members and teachers. Although the federal courts have time and again prohibited the furtherance of any religious beliefs in state-owned schools, their decrees are difficult to enforce in small, isolated communities in which parents are unified in their religious beliefs.

While relatively restrained in the public education sector, the missionary education movement continues to have strong influence over broad sectors of American education. More than 1.3 million students attend Christian academies established by fundamentalist Protestant sects, while another 1.5 million students attend Protestant elementary and secondary schools operated by traditional Protestant churches. Nearly 3 million students attend Roman Catholic schools. Moreover, there are more than 900 religiously affiliated colleges and universities, of which more than 500 are Protestant and more than 200 are Roman Catholic.

(See also BEECHER, LYMAN; CHURCH-STATE CONFLICTS; EVANGELISM; FUNDAMENTALISM; FINNEY, CHARLES GRANDISON; and entries under individual denominations, e.g., CONGREGATIONAL CHURCH.)

Mississippi The 20th state to enter the Union, in 1817, and, historically, a state with the lowest educational standards in the United States. Until a Union military government forced the state to build public schools in 1870, Mississippi, like most other southern states, had no public schools. The idea of financing the education of the poor was anathema to

Mississippi plantation owners, who sent their own children to private schools. There were no public schools for poor white children, and teaching literacy to black slave children was a violation of state laws.

Despite efforts of the Union military government to impose public education on the state, there were few schools in rural areas well into the 20th century and, until 1954, blacks and whites attended separate schools. The 1954 U.S. Supreme Court decision in *BROWN V. BOARD OF EDUCATION OF TOPEKA* forced Mississippi and other southern states to begin desegregating their schools. Although state authorities fought DESEGREGATION for more than two decades thereafter, the state's elementary and public schools were finally integrated by the beginning of the 1980s. However, a mass exodus of white children to private schools left many public schools nearly all-black and the quality of education close to the worst in the nation until the mid-1990s, when it became clear to the business community that the poorly educated, unskilled workforce was destroying the state economy. The state legislature voted teachers sharp salary increases and passed sweeping education-reform legislation that sent additional funds to the state's poorest school districts and saw all schools forced to administer criterion-referenced achievement tests in 2001. The continuing effort lifted the teaching standards in the state's more than 1,000 public schools and the academic proficiency of the state's nearly 500,000 students. Unfortunately, student skills had started at such low levels that even improved teaching could not raise student proficiency significantly. Mississippi remains at the bottom, 50th, of the nation's states in terms of student academic proficiency, with fewer than 20% of students able to display proficiency in either reading or math. A staggeringly high 24% of all schoolchildren live in poverty, however, and more than 53% are minority children—51%

black. Those statistics were compiled before the devastation of Hurricane Katrina in 2005.

The legislature gave the state's institutions of higher education huge budget increases of more than 16% in 1999 and helped float an enormous bond issue to finance new schools of business administration and engineering at the largely black Jackson State University. The program for Jackson State is part of a response to a 1992 U.S. Supreme Court ruling that Mississippi's public colleges and universities had remained illegally segregated and in violation of constitutional requirements for educational equality. The state has nine public four-year colleges and universities, including Jackson State; graduation rates are about 50%. Mississippi has 11 private four-year colleges and 20 public and four private two-year institutions.

Missouri The 24th state to join the Union, in 1821. Although a slaveholding state, Missouri remained loyal to the Union during the Civil War. While denying education to slave children, it nevertheless was one of the more forward-looking states of its region in terms of education, providing for a statewide public school system in its constitution of 1820. Throughout its history, the St. Louis public school system has been one of the most progressive in the United States, having been the first to incorporate kindergarten education into traditional public school education in 1873.

The state has nearly 2,400 public elementary and secondary schools, with more than 900,000 students. In a puzzling anomaly, academic proficiency in reading is well above average for the nation, but proficiency in math is significantly below average. About 20% are minority children, and 10% live in poverty. The state's 123 institutions of higher learning include 14 public four-year colleges and 20 public two-year schools. Missouri has 68 private four-year colleges and 21 private two-year

colleges. Graduation rates at four-year colleges are about 53%.

Missouri ex rel Gaines v. Canada A 1938 U.S. Supreme Court decision that marked the first in a series of six decisions over 16 years that culminated with an end to racial segregation of public schools in the United States. Like the other five cases, the Missouri case was brought to the High Court by the NATIONAL ASSOCIATION FOR THE ADVANCEMENT OF COLORED PEOPLE. The NAACP charged the state with depriving its black citizens of the right to legal education and, therefore, the constitutional right to charge others and defend themselves in court. The High Court agreed, saying that when a state provided legal training, it had the obligation to provide that training "to the residents of the state upon the basis of an equality of right." Although the state did provide blacks with tuition assistance to attend law schools in other states, such out-of-state training was not adequate, the Court said, because it provided no training to cope with Missouri's own laws and legal practices.

Though narrow in scope, the case nevertheless represented the first crack in the wall that segregated the races in American educational institutions. It was part of a carefully planned NAACP strategy designed to dismantle institutional segregation with a series of small attacks that would erode the system gradually. By filing suits in different states, the NAACP seemed intent only on effecting simple justice and avoided arousing suspicion that it had a grand plan to bring about desegregation nationwide. The strategy worked perfectly.

After a series of victories against educational authorities in Virginia (1940), Oklahoma (1948 and 1950) and Texas (1950), the NAACP filed its final, landmark lawsuit in *BROWN v. BOARD OF EDUCATION OF TOPEKA*. Using all the previous, little noticed, smaller High Court decisions as constitutional precedents, it

proved to the Court that racial segregation itself was unconstitutional. In 1954, the High Court agreed and ordered an end to all school segregation in the United States.

(See also AFRICAN-AMERICAN EDUCATION.)

Mitchell v. Helms A U.S. Supreme Court ruling in 2000 that a federal program that placed computers and other “instructional equipment” in religious-school classrooms did not violate the the Establishment Clause of the First Amendment, mandating constitutional separation of church and state. *Mitchell* joined a long series of similar decisions dating back to 1946, when the Court first enunciated the CHILD BENEFIT THEORY, which holds that universally available public aid provided directly to children and benefiting only them cannot be construed as being of any benefit to the schools they attend. In *Mitchell*, the Court once again held that government may—indeed, must—provide public funds to equip private and religious school *students* with secular, religiously neutral instructional materials and services universally available to public school students—e.g., bus service, secular textbooks, remedial and special education, and so on. The Supreme Court’s reasoning in all such cases is based on a three-part test of (1) secularity, (2) universal availability in the public school sector and (3) direct delivery of the instructional materials or services to students to prevent religious schools themselves from benefiting or promoting religious instruction.

(See also AGUILAR *v.* FELTON; CHURCH-STATE CONFLICTS; EVERSON *v.* BOARD OF EDUCATION; MEEK *v.* PITTINGER; WOLMAN *v.* WALTER.)

mixed dominance (or laterality) The ability or tendency to perform some activities with one side of the body and some with the other, such as throwing a baseball with the right hand and batting left-handed or throw-

ing right-handed and kicking a football with the left foot. Mixed dominance is not synonymous with ambidexterity, which permits the individual to perform all activities with either side of the body, with near-equal ability. Most individuals have a slight degree of mixed dominance, but the vast majority have a distinct preference for either the right or left side.

(See also HANDEDNESS.)

mnemonic device Any aid or trick for committing information to memory. Mnemonic devices may be letters or simple words, short catchy poems, long complex phrases or even images. Thus, “i before e, except after c” and “Thirty days hath September, April, June and November . . .” are examples of simpler, poetic mnemonic devices learned in childhood and retained throughout adult life. The visual image of a man in a tan hat is a useful mnemonic device for teaching children to spell Manhattan.

Mnemonic devices are particularly useful in the classroom for helping students remember material that may seem complex. By recoding material with an easily retrievable image or sound, mnemonics translate complex concepts into simple, related terms. Mnemonic devices are also used in lieu of function keys in various computer programs. By pressing a single control key and typing such mnemonic instructions as S or O one can “save” or “open” a document or file. Unfortunately, there is no complete reference work of mnemonic devices, which tend to be handed down from generation to generation like folklore.

model schools Elementary schools attached to teacher-training schools during the 19th century and staffed by student teachers and their professors. Forerunners of today’s LABORATORY SCHOOLS, they provided practice teaching experience for students at NORMAL SCHOOLS, which were the earliest teacher-training schools

and which provided two years of post-high school education.

modernism An educational term of the 1920s that referred to the teaching of Darwin's theory of evolution and other "modern" elements of science, social science and history that apparently contradicted Scriptural doctrine. Led by WILLIAM JENNINGS BRYAN, opponents of modernism contended that the Bible was the most dependable and, indeed, infallible source of scientific knowledge. Scores of educators, including university presidents, responded, none more eloquently than Shailer Mathews, dean of the University of Chicago Divinity School, in his tract *The Faith of Modernism* (1924). Modernism, he said, was neither a denomination nor a theology, but "the use of scientific, historical, and social method in understanding and applying evangelical Christianity to the needs of living persons." Modernists, he wrote, were Christians who accepted the results of scientific inquiry and adopted the methods of historical and literary science in studying and understanding the Bible. Such study, he added, in no way diminished their belief that Christian attitudes and faith met the spiritual and moral needs of people.

The battle between Christian fundamentalists and modernists reached a climax in 1925 with the famed SCOPES MONKEY TRIAL, in which the American Civil Liberties Union challenged a state law that banned the teaching in public schools of "any theory that denies the story of the Divine Creation of man as taught in the Bible, and to teach instead that man has descended from a lower order of animals." Although William Jennings Bryan defended the state and won the case, he and the state drew worldwide ridicule, and his sudden death a week later left the fundamentalists leaderless and the modernists in full control of 20th-century public education in the United States.

modern languages In American education, the study of those languages other than English that are currently spoken, written and read in the world's industrialized and economically influential nations and widely used internationally. Although any current, spoken non-English tongue qualifies as a modern language, only Spanish, French and German are routinely offered in American secondary schools and only Spanish, French, Italian, German, Russian, Arabic, Hebrew, Chinese and Japanese are usually offered for study by the general student body in American colleges. Modern Asian languages other than Chinese and Japanese and most African tongues are studied by only a handful of individuals in the United States, usually on a tutorial basis and often as part of broader courses in African or Asian studies. Modern languages, in the commonly used sense of the term, have been central to academic studies since the first schools were founded in ancient Greece—largely because such study was essential to the conduct of foreign trade. In ancient Rome, the study of GREEK evolved into an aesthetic rather than a practical pursuit. Although LATIN had become the international language of commerce, Greek was essential for the appreciation of Greek poetry and plays. As Cicero pointed out, Greek poetry "is read among all nations, while Latin is confined to its own natural limits. . . ."

In the American colonies, modern languages—then referred to as "commercial and traveling languages"—were taught only at the college level and limited to French, Spanish and Dutch, with French the most important of the three. Elementary (common) schools taught no foreign languages, and academies, which limited students to the college-bound, taught only Latin—the language of the church. Most colleges during the colonial era were theological schools that prepared students for the ministry. For them, Latin, Greek and Hebrew were the essential languages. Secular

studies invaded the college curriculum only at the beginning of the 18th century to meet the demands of students planning careers in government.

As Dutch influence waned in international trade and as the language disappeared in New York, it disappeared from the American college curriculum as well. It was replaced by German, following a wave of German immigration in the late 17th century.

In 18th- and 19th-century America, modern languages were taught exclusively in colleges, with French the most essential. Before the outbreak of the French Revolution, it was considered the universal language of the Western world; hence the use of the term *lingua franca* to describe any common language used by a variety of people with different native tongues. It was not only the language of diplomacy, it was also the language of international trade, it flourished as a literary medium and it was the language used in most early 19th-century engineering and scientific texts. As Germany's universities emerged as international centers of scientific learning in the middle of the 19th century, German became more essential, especially for students of medicine and science, who depended heavily on German texts. Spanish was of relatively little import because backward economic conditions in Latin America precluded much international trade.

French, however, remained the language of international trade and diplomacy—and therefore essential for most college students until World War II, when English displaced it as an international language. With the post-World War II emergence of Germany, the Soviet Union (now Russia), China and Japan as major industrial powers and trading nations, the languages of each of these countries became more and more essential to American students bound for careers in international trade, finance or diplomacy. Spanish also grew in importance as the nations of Latin America evolved into major

trading partners with the United States and as millions of Spanish-speaking Puerto Ricans and Latin Americans immigrated into the United States.

Until the end of World War II, few public schools offered any foreign language courses—largely because they were of little practical use to any but the college-bound. Those that offered such instruction usually limited it to French. Private secondary schools that prepared almost all their students for college and eventual lives in government, business and the professions required four years of study in at least one modern language.

The American victories in World War II and the emergence of the United States as an internationally involved nation produced widespread interest in foreign languages throughout the American educational community. Public secondary schools and even public elementary schools began offering and even requiring modern language instruction to students as young as nine. By 2000, 77.5% of high school students were graduating having studied modern foreign languages for at least two years. By then, too, a wave of Hispanic immigrants had more than doubled the Hispanic population in the United States to more than 40 million and helped swell the percentage of secondary school students studying foreign languages, especially Spanish. Nearly 69% of all high school students enrolled in foreign languages study Spanish; only 18% study French, which was once the most studied. Fewer than 5% study German, and only 1% each study Italian or Russian.

At the college level, the pattern of foreign language study has been much the same, although a far lower percentage of students intensify their studies enough to major in a foreign language. Indeed, only about 1.2% of all bachelor's degrees, .006% of master's degrees and 2% of doctorates are awarded in foreign-language studies. The number of bachelor's

degrees awarded in 1970 totaled about 20,000 and then fell to less than 8,400 in 1984, before bouncing back to more than 15,000 in 2002. The number of master's degrees topped 7,500 in 1970, fell to a low of 1,721 and climbed back to nearly 2,900 in 2002; the number of doctorates climbed from 781 in 1970 to 843 in 2002. More than 47% of all bachelor's degrees went to students of Spanish, 15.6% to students of French, 7% to students of German, 2.5% to students of Japanese, 1.8% to students of Russian, 1.7% to students of Italian, and 1.2% to students of Chinese.

modular scheduling A flexible method of arranging classroom time as a multiple of unconventionally small units of time. Instead of uniformly dividing the school day into the conventional series of 45-minute or one-hour classes, the day is divided into 10-, 15- or 20-minute units, or modules, depending on which system the school adopts. Depending on the material to be covered, individual classes are then assigned an appropriate number of modules. Thus, a lecture class might, for example, have fewer modules than a class involving laboratory work or special projects. The system is flexible enough so that it can be readjusted each week, depending on the materials to be covered and the degree of cooperation between different departments and teachers.

(See also **BLOCK SCHEDULING**.)

Monroe, James (1758–1831) Fifth president of the United States and the last of five successive presidents to ask for constitutional authority for a national system of education. A brilliant two-term president, he governed from 1817 to 1825, during what was called the “era of good feeling” in which almost all the proposals he made were eagerly embraced by Congress and the American people—except the granting of federal authority over education. Monroe saw action during the Revolutionary

War, studied law under Thomas Jefferson, won a U.S. Senate seat in 1790, was twice elected governor of Virginia and served as secretary of state and secretary of war under President James Madison, whose efforts to establish a national university he vigorously supported.

During his own presidency, he acquired the Floridas from Spain and enunciated the Monroe Doctrine, ending European colonization in the Americas. His only major failure was in the area of national public education, which was opposed by northern cotton mill owners who feared an end of child labor and southern cotton growers who feared an end to slavery.

Montana The 41st state to enter the Union, in 1889. Prior to statehood, in 1865, it was the first territory to establish a public school system, opening the first public school in Virginia City the same year. The state now has a remarkably high-quality public school system—indeed, sixth best in the nation—with 870 elementary and secondary schools and a combined enrollment of more than 150,000 students. Eighth graders ranked fifth and sixth in the nation, respectively, in reading and math proficiency, while fourth graders ranked 10th and 20th. About 14% were minority students, and 13.7% live in poverty. The state has 23 institutions of higher education: six public four-year colleges and universities, 12 public two-year colleges, four private four-year colleges and one private two-year college. Faculty salaries are among the lowest in the nation, and graduation rates at four-year colleges are only 42%. Montana has the largest number of the nation's 30 federally supported AMERICAN INDIAN TRIBAL COLLEGES—all but one of them two-year schools. Salish Kootenai College is a private, nonprofit four-year college. Four of the two-year schools, Fort Belknap, Fort Peck, Little Big Horn and Stone Child colleges, are public, and the other two, Blackfeet Community

College and Chief Dull Knife College, are private, nonprofit institutions.

Montessori, Maria (1870–1952) Italian physician who pioneered a new, controversial but enormously successful educational method for teaching young children. The first woman ever to earn an M.D. degree in Italy, Montessori became a psychiatrist, studied pedagogy and conducted pioneering research in the study of intellectual development of young children.

After teaching mentally retarded children for two years, she returned to university, first to study pedagogy and then to teach anthropology.

In 1907, she was invited to found a school in Rome for about 60 unsupervised slum children ranging in age from three to six years old. It was with these children that she developed the so-called Montessori Method. By 1909, she was operating two schools in Rome for the poor, two for middle-class children and one for children of aristocrats—each operating from 9 A.M. to 5 P.M. She then published her famed work, *Il metodo della pedagogia scientifica applicato all' educazione infantile nelle Case dei Bambini*, which was subsequently translated into 20 languages. The English edition, *The Montessori Method* (1912), was an immediate best-seller among parents in the United States who wanted to apply her methods of child rearing and among educators and teachers from Maine to California eager to learn the new method and to profit from its popularity by adding “Montessori” to the names of their schools.

Anne George, a teacher who translated Montessori's book and was Montessori's first American student, opened the first legitimately named Montessori school in the United States, in Tarrytown, New York, in 1912. Montessori visited the United States in 1912 and again in 1915 and helped found the Montessori Education Association of America to train teachers in

her method and to accredit schools carrying her name.

The Montessori Method required a new type of teacher whom Montessori described as one able “to stimulate life—leaving it [life] then free to develop, to unfold. . . .” Montessori had concluded from her work with children that the young learn mainly by themselves, without conscious effort or formal instruction. Indeed, they absorb and learn spoken language directly from their surroundings with remarkable ease and rapidity. She therefore based her entire method on self-development and auto-education, allowing children to learn by themselves at their own pace. The primary function of teachers was to prepare an environment that would be acted upon by the child and to intervene only when necessary to facilitate such autoeducation. Her method was the antithesis of the traditional method in which an authoritarian teacher dictated what silent, immobilized students would have to learn.

Montessori believed that children pass through a series of temporary, irreversible periods during which they are particularly sensitive to and most ready to acquire a particular skill or knowledge. Children's minds and intellects, she said, were subject to their own rhythms, laws and stages of development; the task of the skilled teacher (and, indeed, parent) should therefore be to prepare an appropriate environment for children to exploit during each stage of development and period of learning sensitivity. Montessori's schools were the first to be equipped with functional, child-sized furniture. The schools based their “curricula” on learning games, or didactic materials, that entertained children while allowing them to absorb new knowledge and skills. Montessori divided education into three parts: motor, sensory and intellectual (language and education). Sensory materials included wood, metal, cloth, cardboard and other materials of all colors, sizes, shapes, weights, textures and sound, for

children to see, touch, smell, hear and respond to orally. Montessori called young children “little explorers” who must have freedom to make discoveries in their environment.

To capture each child’s interest and encourage concentration, the materials had to be attractive and challenging. Flexible time periods allowed children to spend as little or as long as they wanted pursuing any tasks they chose, using whatever materials they found most attractive. Children had free access to several different rooms, each with a different type of activity. Children were free to work alone or in groups, moving about the room at will or from one room to another. With a three-year age range in the typical, ungraded Montessori class, younger children often learned by watching older classmates. “The best teachers for children are children themselves,” said Montessori.

There were a few rules. Children were not allowed to intrude on the work of others. To discourage such intrusions in classes of as many as 30 children, each child had an individual piece of carpet on which to work—a type of private property, whose clearly visible boundaries could not be breached by others, except by invitation.

Motor education was fostered through what Montessori called the exercises of practical life—activities such as care of oneself and of the environment, moving and arranging furniture, caring for plants, and preparing meals with china dishes and genuine utensils that had to be arranged at the table, collected afterward and cleaned. Through entertaining exercises, gymnastics and rhythmic games, children learned good posture, proper speech and graceful movement.

As children matured, the prepared learning environment grew more complex, with touch boards added to the sensory experience, allowing the expansion of vocabulary to include “smooth, smoother, smoothest,” and bells added to lead the child into music and develop

such words as “softer” and “louder.” But each experience was developed to evolve into new experiences of ever increasing complexity and abstraction. Thus, the touching of sandpaper letters and manipulation of wooden alphabets evolve into writing, while looking evolves into reading.

At every stage of development, Montessori and her teachers took advantage of each child’s particular stage of development and receptivity to specific types of learning. Thus, Montessori noted that some preschoolers were word-lovers who demanded names for everything and took evident pride in learning even the most difficult words. She also took advantage of each child’s tendency at a certain period for ordering things and numbering them. She provided bead chains, number rods and other devices that allowed the children to teach themselves concepts of mathematics. Such didactic materials, she said, offered “motives of activity,” which autoeducation provided individual freedom to act, limited only by rules to protect the collective interest.

Although a teacher is present at all times, children are expected to select materials that most interest them and work for long periods, engaging in autoeducation through trial and error. The teacher mediates but does not instruct unless absolutely necessary to further each student’s progress. Designed to encourage self-development, allowing life to unfold before the child, who learns what he or she wishes to know, the Montessori Method avoids almost all forms of collective (and often individual) discipline. Charging that children in conventional schools are “not disciplined, but annihilated,” Montessori allowed children to “construct” their own psyches by developing particular capacities according to their own rates of development.

Montessori’s methods were developed in the wake of the KINDERGARTEN movement and at the peak of the CHILD STUDY MOVEMENT in the United States—a time when American parents

were told that, contrary to the teaching of many churches, children were not born in original sin. Indeed, leading educators such as G. STANLEY HALL of Clark University proclaimed that for parents and teachers to constrain, prohibit and punish their children was to threaten their development.

"The guardians of the young," said Hall, who led the child study movement, "should keep out of nature's way" and give them free rein, treating them as young animals rather than forcing them to meet adult standards. Teachers were told to extend the informality of kindergarten into the upper elementary grades and adjust classrooms to the rhythms of children's natural interests and needs. That is exactly what Maria Montessori did, and her method became the rage in schools throughout Europe, the United States and even as far away as India.

A barrage of criticism, however, led to a decline in support for Montessori schools and, eventually, their virtual disappearance in the United States after World War I. The criticism came not from traditional, "spare-the-rod" educators but from leaders of John Dewey's progressive school of education. Harshes of these critics was the notable professor of education at Columbia Teachers College WILLIAM HEARD KILPATRICK, the leading exponent and interpreter of Dewey's "project method" of teaching by doing. Kilpatrick railed at school teachers, administrators and educators who variously misread and misunderstood the theory of progressive education as meaning that children should be permitted to play freely in school, free of discipline. Like Dewey, Kilpatrick believed in strict behavioral controls and close teacher supervision of children. His convincing opposition in his 1914 book, *The Montessori Method Examined*, is generally attributed with bringing the Montessori schools movement to a halt in the United States until after World War II.

After Montessori's death in 1952, her method experienced a resurgence as American

parents adopted the child-rearing methods of the widely read pediatrician Benjamin Spock, who advocated kindness and understanding toward children instead of traditionally stern, inflexible discipline. In 1960, proponents of the Montessori Method established the American Montessori Society. By 1975, the first Montessori public elementary school had opened in Cincinnati; and by 2000, upwards of 4,000 schools bearing the Montessori name were operating across the United States. The vast majority, however, were not true Montessori schools because they did not use the Montessori Method as approved by the American Montessori Society. The problem stems from the fact that the name Montessori is in the public domain, and any school can call itself a Montessori school to profit from the prestige that the name carries. Only about 900 Montessori Schools are actually affiliated with the American Montessori Society, which demands that all teachers in such schools be specially trained and certified and that the schools themselves adhere strictly to the methods and standards of the society.

Whether the Montessori Method itself produces any academic advantages over conventional contemporary education remains a center of controversy because of the lack of any recent, controlled population studies.

Moody, Dwight L. (1837–1899) American fundamentalist preacher, world-renowned "father" of modern revivalism and founder of a number of unique, still-extant educational institutions. Born in Massachusetts, Moody left school and ended his formal education at 13. After a series of odd jobs, he went to work in his uncle's Boston shoe store, joined the recently founded YMCA and a Congregational church and its SUNDAY SCHOOL. In 1856, he moved to Chicago and became a successful shoe salesman. Financially secure, he became more active in, and eventually president of, the

Chicago YMCA—enough support for him to organize his own, independent Sunday school. Located in one of the city's poorest districts, it quickly became a center of evangelical activities that attracted people from around the city. Moody organized prayer meetings, adult literacy classes, home visitations and a variety of philanthropic and welfare activities that soon engaged him full time.

After the Chicago fire of 1871, he organized a new, nondenominational church and expanded his activities with the YMCA to a degree that earned him city-wide and then regional recognition. At an 1870 YMCA convention in Indianapolis, he had met Ira D. Sankey, a gifted Methodist organist and composer of hymns from Pennsylvania who was president of a local YMCA branch. Enthralled by the dramatic effect of Sankey's hymn singing on the audience, Moody spontaneously asked Sankey to join him in Chicago, where the two launched a lifelong evangelical partnership that remains a model for all revivalist movements.

Although neither had finished high school, had any formal theological training or been ordained, they instinctively built a revivalist movement to which fervent followers flocked by the hundreds of thousands in the United States, Canada and Britain. Describing the world as a sinking ship whose passengers could save themselves only by immediate conversion to Christ, Moody took a nondenominational approach that invited Christians and non-Christians alike to join his crusade—the first, to be reborn; the latter, to discover Christ for the first time and convert. A charismatic speaker, he preached a doctrine based on absolute biblical inerrancy, the imminent return of Christ and the necessity of conversion and rebirth in preparation for the Lord's return.

In the 1870s, Moody's oral and printed sermons, lectures and prayers reached tens of thousands, and Sankey's widely circulated

hymns reached millions at a time when few Americans could afford to attend school beyond the age of 10. As the head of the Illinois Sunday school movement, Moody helped develop a uniform, graded Sunday school curriculum that was eventually adopted by Protestant Sunday schools across the United States. As a YMCA leader, he helped organize YMCA chapters on college campuses, which, in turn, spawned a vast STUDENT VOLUNTEER MOVEMENT FOR FOREIGN MISSIONS that sent thousands of missionaries around the world. In 1879, he founded the Northfield Seminary for girls and, two years later, the Mount Hermon School for boys (now the secular, coeducational Northfield Mount Hermon School) to train youngsters for a life as Christian missionaries. In 1886, he organized the Northfield Conference at Mount Hermon School to inspire college students who had attended his revival meetings to serve as Christian workers to evangelize American institutions of higher education. One hundred students—the Mount Hermon Hundred—pledged themselves to that goal. A year later at the next conference, they were joined by 2,000 more—a total of 1,500 men and 500 women who in 1888 formed the Student Volunteer Movement pledged to the "evangelization of the world in this generation."

In 1887, he obtained enough financial backing to build a training school in Chicago for evangelical preachers. Opened two years later, the Moody Bible Institute became the forerunner of more than four dozen similar degree-granting institutes across the United States. Devoted to the training of nondenominational, orthodox evangelical Christian preachers, the institute ignored the traditions of conventional, degree-granting colleges and seminaries and concentrated solely on training evangelist ministers. Totally unique in its era, the institute pioneered the use of every new pedagogical technology, including gospel wagons, correspondence courses, radio (and later

television) broadcasting and even missionary aviation.

Although still not accredited by traditional college accreditation associations, Moody Bible Institute has more than 1,400 students to whom it awards bachelor of arts and bachelor of science degrees in aviation technology, biblical studies, communication, world missions, pastoral studies, religious education, sacred music, theology, and applied linguistics. Its mission remains "to educate and train individuals to proclaim the gospel of the Lord Jesus Christ, to promote evangelism, and to serve the evangelical Christian church vocationally and/or avocationally in its worldwide ministry."

morality education The teaching of civility and the rules of proper (and improper) conduct in society. Often called values education, morality education is a highly controversial area in modern American public education, depending on one's view of the many different and often contradictory rules represented. Morality education was an integral part of all elementary and secondary education during the first two centuries of education in the New World, when Protestant ministers and lay instructors controlled private and common, or public, schools. The development of state-controlled public school systems during the last half of the 19th century secularized the administration of public schools but did little to change the Protestant orientation of morality education because of the dominance of Protestants in the teaching profession and the absence of challenges to such teaching. Indeed, Protestant influence in public education was so pervasive that the Roman Catholic Church decided to establish its own school system in the 1870s to prevent "Protestantization" of the growing number of Catholic children in the United States.

Morality education derived from various Protestant Christian doctrines persisted as an

element of American public education until after World War II—especially in religiously homogeneous communities, where it persists to this day. In more heterogeneously populated urban and suburban areas, however, such education came under attack during the early 1960s, and the U.S. Supreme Court handed down a succession of rulings reaffirming First Amendment separation of church and state. The rulings struck down a variety of religious and quasi-religious practices and even elements of morality education when such instruction touched on even the most nondenominational, nonsectarian theistic doctrines. Fearful of running afoul of the First Amendment, schools turned to so-called value-neutral education, in which teachers explained to students that values were relative and personal. Even textbooks were value-neutered, with the Pilgrims converted from seekers of religious freedom to "people who take long trips." Children were taught to figure out and embrace their own values, no matter what they are.

By 1989, however, it became clear that American elementary and secondary school students were admittedly unsure of the differences between right and wrong and unable to make complex personal moral decisions. More than half the school-aged children in the United States were growing up in one-parent families, leaving many unable to cope with such complex social problems as drugs, alcohol, suicide, teen pregnancy and the like, which had never before breached the school grounds. A 1989 survey by Louis Harris & Associates of 5,000 students found 47% willing to cheat on an important examination and 36% ready to lie to protect a friend who vandalized school property. Only 24% would tell the truth. In 1993, nearly 60% of high school seniors surveyed by the U.S. Department of Education admitted cheating on tests and assignments, and 31% claimed that teachers ignored such cheating, even when they witnessed it. Another

poll found 67% of high school students ready to lie to achieve a business objective. And a 1988 survey of 1,700 sixth to ninth graders of both sexes by the Rhode Island Rape Crisis Center found nearly 60% who believed the male had the right to sexual intercourse against the female's consent if "she gets him sexually excited." Twenty percent believed the male had the right to nonconsensual intercourse if he had "spent a lot of money on her," while 59% gave him that right if they had been dating a long time.

Many parents and politicians blamed the schools and their teachers for failing to guide children safely past these problems. At the same time, educators and parents alike disagreed on what ought to be taught. "Teachers are told in one breath to socialize the rising generation and in the next to check personal values at the door," complained the *Education Letter* of the Harvard Graduate School of Education. Although many religious groups opposed the reintroduction of morality education in public schools, some communities found themselves so overwhelmed by juvenile crime and social problems in the late 1980s that they demanded a return to morality education in the schools.

Religiously oriented morality education remains a part of the public school curriculum in isolated rural communities, where the entire population is of one mind and where there is little federal scrutiny. Where religious belief is fairly strong and uniform statewide—especially in the Deep South—state legislatures continue regularly to pass laws mandating prayer and prayer substitutes in the classroom, under the guise of morality education—and the Supreme Court continues just as regularly to declare such laws unconstitutional. The new secular values education introduced in the early 1990s has yet to face a crucial constitutional test.

The question of morality education, however, remains a major problem in American

schools. Some schools are solving the problem by reintroducing CIVICS courses, which were required for high school graduation prior to World War II. At the elementary school level such courses teach the broad shape of American governmental structure, emphasizing responsible citizenship and civic behavior by the individual—that is, how individuals can make life better for each other in a democracy where individuals have wide latitude to do as they please. Some teachers teach citizenship by organizing their classrooms as democratic minisocieties in which careless, unthinking and harmful actions by individuals are exposed, discussed and penalized by peers. Children are thus taught about the far-reaching consequences of littering and graffiti and the communal benefits of waiting in line, obeying laws, accepting majority rule and respecting dissenting opinions. Students are taught to take responsibility for their actions and their behavior. In 1987, the AMERICAN FEDERATION OF TEACHERS urged development of a formal curriculum and widespread introduction of such citizenship education.

Some schools have gone much further, however, and are reintroducing straightforward, albeit secularized, morality education. Teachers in one California school, for example, begin classes with the announcement, "This class will stand for the right things," and students are asked to discuss each of the "right things," namely abstinence from drugs, caring for people, honesty, perseverance, respect and responsibility.

(See also CHURCH-STATE CONFLICTS; ETHICS.)

moral philosophy One of the three Aristotelian divisions of philosophy, which 18th-century educators in England and the American colonies used as a convenient approach to teaching philosophy. The other divisions were MENTAL PHILOSOPHY and NATURAL PHILOSOPHY. Mental philosophy covered logic and mathematics and

natural philosophy related to botany and physics. Although Aristotelian moral philosophy dealt with ethical rules for a happy life, 18th-century educators in the Americas were largely Protestant ministers, and the moral philosophy they taught was, in effect, the philosophy of the Protestant Christian religion. However, many of these Protestant ministers—and their congregants—were religious and political dissenters, who, unlike their counterparts in Anglican England, used moral philosophy to argue against the supremacy of the Church of England and the Crown. Indeed, moral philosophy as taught in some colonial institutions helped sow the seeds of revolution. In education, the moral philosophy of colonial and postcolonial institutions of higher education eventually evolved into a number of the elements of today's social and political science curricula.

More Effective Schools An early, pioneering educational reform scheme introduced into public schools in 1964 in economically deprived areas of New York City. Supported by the UNITED FEDERATION OF TEACHERS, the scheme reduced class size, increased spending and added counseling and psychological services in 21 racially mixed schools. At the end of three years, however, an evaluative study by the Center for Urban Education found the scheme had “made no significant difference in the functioning of the children.” Although there were angry confrontations between, and contradictory claims from, proponents and opponents of the scheme, the reasons for the failure were never fully explained.

Morgan, John (1735–1789) American physician, educator and “father” of modern medical education in the United States. Born in Philadelphia, Morgan was a member of the first graduating class of the College of Philadelphia (later the University of Pennsylvania).

Following a six-year medical apprenticeship, he served four years as a surgeon in the French and Indian War, but was so appalled by the poor medical care that he determined to pursue formal medical studies in England in 1760. After obtaining an M.D. at the University of Edinburgh and pursuing additional medical studies in France and Italy, he returned to Philadelphia in 1765, determined to establish the first true medical school in the Americas. On May 3, 1765, at his request and suggestion, the College of Philadelphia opened the first medical school in the colonies and named Morgan to fill the first chair as professor of the theory and practice of medicine. At the 1765 commencement a month later, he delivered a *Discourse upon the Institution of Medical Schools in America*, which is often called “the charter of medical education” in the New World.

In it he called for a separation of the practices of surgery and pharmacy from “physic” (“the cure of inward diseases, and such complaints as require the use of medicines”). Calling for a code of medical ethics, he urged an end to the practice of doctors selling medicines to patients. He also called for vast changes in medical education, urging the development of a new curriculum based on liberal education in the arts, sciences and languages, followed by extensive training in anatomy, “materia medica,” botany (herbal medicine), chemistry, the theory of physic (physiology and pathology) and the practice of medicine.

Morgan was named director general of hospitals and physician in chief of the Continental Army during the Revolutionary War, but his efforts to reform medical care in the army so angered his colleagues that he was dismissed in 1777. Later, Gen. George Washington personally exonerated him. One of the founders of the Philadelphia College of Surgeons, Morgan spent the remainder of his life in private practice in Philadelphia.

(See also MEDICAL EDUCATION.)

morpheme The smallest unit of meaning in any language. Used by instructors and other educators in the field of reading and linguistics, a morpheme can range in size from a single letter (a, for example) to a multiple-letter word—e.g., brain. In turn, a word can consist of a single morpheme (a, brain) or several morphemes, as in baseball.

Morphemes do not have to be complete words. Prefixes and suffixes, for example, can seldom stand alone as independent words but nevertheless add meaning to words. In compound words with affixes that cannot stand alone, the central syllable that can stand alone as a word (control, for example, in uncontrolled) is called a free morpheme, while the affixes—un and ed—are bound morphemes, because any meaning they have is tied, or bound, to the free morphemes they modify.

morphology In linguistics, the study of how words and language are formed and structured in relationship to one another. Morphology examines the etymology, derivation, composition and inflection of syllables and words. In science, morphology refers to the comparison of the forms of different organisms, as in comparative biology.

mortarboard Colloquial name for the square, flat-topped caps worn by most students at school and college graduation ceremonies. Their use dates back to the Middle Ages and the guild of masons who, like other guilds, sent representatives to march in festive ceremonies, including those relating to the local college. Their hats, like those of other guilds, represented some aspect of their trade—in this case, the boards on which they mixed their mortar. Today's ubiquitous mortarboard is more a product of low cost and manufacturing convenience for makers of ceremonial dress. There is, however, no universal rule for academic dress. Throughout history, different colleges and uni-

versities and even different academic and scientific departments within those institutions have developed distinctive caps and gowns, of which the mortarboard is but one.

motivation Those collective needs and desires that drive an individual to act and, in education, to learn. Many educators divide motivation into two types, intrinsic and extrinsic. The former refers to a student's inner drive to learn—a drive visible in infants and preschool youngsters whose curiosity often serves as intrinsic motivation to acquire skills and knowledge. Extrinsic motivation is derived from external forces such as reward and punishment by parents, teachers and other authorities.

Developed in the preschool and elementary school years, motivation is essential to learning. It is, therefore, essential that elementary school teachers develop techniques and strategies to motivate each student. Extrinsic motivation is quite often successful in encouraging or discouraging simplistic behavior and learning, but seldom a success in developing long-term motivation to learn complex information. Intrinsic motivation sustains a child's willingness to work hard when rewards may be far in the future or when the only reward may be the joy of learning.

Pedagogically, the task of developing a child's intrinsic motivation centers around putting a youngster in command of the learning situation rather than making him or her a passive target at which to throw information. In effect, teachers must create learning activities in which all students want to participate and master and in which they can all find conditions for success. Learning activities that are too difficult or too easy destroy children's intrinsic motivation and encourage the common belief that learning success or failure is the result of innate ability rather than hard work. It is the teacher's task to select the right mix of activities

for as wide a range as possible of students to succeed through hard work.

Mott, John R. (1865–1955) Organizer and long-time leader of the STUDENT VOLUNTEER MOVEMENT FOR FOREIGN MISSIONS (SVM), which recruited thousands of American college students to serve as Christian missionaries in southeast Asia, China, Japan, Africa and Latin America. The student head of the Cornell University YMCA, Mott became the founding chairman of SVM in 1888. In 1900, he wrote the widely circulated *The Evangelization of the World in This Generation*, and by 1910 he had succeeded in organizing 2,000 SVM on-campus and off-campus study groups with 25,000 students.

Obsessed with Christianizing China, he wrote in 1911, "It is Western education that the Chinese are clamoring for, and will have. If the Church can give it to them, plus Christianity, they will take it; otherwise they will get it elsewhere, without Christianity—and that speedily." His appeal sent American student missionaries swarming across China in the pre-World War I years. By 1925 they had enrolled some 250,000 Chinese primary school students, more than 25,000 high school students and nearly 5,000 college students in American-style missionary schools.

During World War I, Mott turned his attention to the organization of YMCA students and volunteers from college campuses to provide YMCA-type programs for Allied troops and for prisoner-of-war camps on both sides. The campus enthusiasm for SVM had peaked by then, however. Even in China, growing nationalistic demands for local control over educational institutions was discouraging recruitment of new student missionaries in the United States. Meanwhile, a general, war-inspired disillusionment swept across most U.S. college campuses, thus dissipating much of the enthusiasm for SVM. Mott stepped down as chairman in 1920

and spent the next 20 years promoting world ecumenism as chairman of the International Missionary Council. A prolific writer, he shared the Nobel Prize for peace in 1946.

Mount Holyoke College The world's first women's college, founded in South Hadley, Massachusetts, in 1837 by MARY LYON. Although EMMA WILLARD and CATHERINE BEECHER had founded women's academies whose curricula approached those of men's colleges, Mount Holyoke was the first women's institution with a curriculum identical to that of the finest men's colleges of the day. In planning Mount Holyoke, Lyon visited both Willard and Beecher's schools, but she also consulted with a former teacher, Dr. Edward Hitchcock, an eminent scientist and instructor at AMHERST COLLEGE. Although Lyon sought to duplicate the Amherst curriculum at Mount Holyoke, she found initially that few girls were academically prepared for college-level courses, and she designed the first year's curriculum at Mount Holyoke to prepare students for college-level studies in succeeding years.

From its beginnings, Mount Holyoke's tough academic requirements and demanding curriculum assured its students an education equal to that of the finest men's colleges. At first, the school offered only a three-year curriculum to a junior, middle and senior class. Lyon made the curriculum as advanced and as demanding as possible, to make Mount Holyoke "like our [men's] colleges, so valuable that the rich will be glad to avail themselves of its benefits and so economical that people in very moderate circumstances may be equally and as fully accommodated." Her zeal for improving women's education inspired more than 1,500 of her students to follow her example, by teaching other women and furthering the growth of higher education for women. Many went on to found such outstanding women's colleges as Mills College in California.

Lyon also limited enrollment at Mount Holyoke to more mature, academically motivated students, at least 16 years old. She also required students to take entrance exams and used exam scores to determine whether to assign students to first-year preparatory work or second-year college-level work. The cornerstone of the college was set in October 1836, and the doors opened at America's first women's college a year later. It was an immediate success. By mid-afternoon, 80 young women had arrived by stagecoach and carriage. One hundred sixteen students enrolled for the following spring term, and by the next autumn, the college had to turn away 400 applicants for lack of room. Unlike men's colleges of the day, Mount Holyoke was, from the beginning, a boarding school. Determined to serve poor women as well as rich, Lyon kept tuition, room and board to \$64 a year. Lyon herself paid the costs of academically qualified students who otherwise could not have afforded to attend.

To keep costs low, the school had almost no paid staff other than its teachers. Each student—rich or poor—had to do two hours of work each day, sweeping corridors, washing and ironing laundry, washing dishes, baking and taking care of the lawns and gardens. Such work, wrote Lyon in her *Principles and Design of the Mount Holyoke Female Seminary*, had three purposes: to teach the students equality and break down social and class differences; to teach them self-sufficiency and independence; and “to promote their health by . . . furnishing them with a little daily exercise of the best kind.”

In a time when women were refused all access to higher education, the opening of Mount Holyoke began a new era for women's education in the United States. Mount Holyoke remains one of America's premier colleges—“the oldest continuing institution of higher education for women in the United States.” Although the original building burned to the



Mary Lyon Hall, the administration building of Mount Holyoke College, the world's first college for women
(Mount Holyoke College)

ground in 1896, Mount Holyoke's initial 15-acre campus has grown to more than 800 acres. Located about 90 miles west of Boston, it remains an independent liberal arts college for women, with an enrollment of about 2,150.

movement education An approach to physical education that gives students an intellectual understanding of each physical movement before they are asked to perform the movement. By first comprehending how each movement is performed and the range of movements of which their bodies are capable, students gain self-confidence and find it easy to attempt the particular movement. Developed in England after World War II, the approach subsequently gained wide acceptance among

physical education teachers in the United States—first in early childhood education, then in rehabilitating the physically handicapped. As videotaping became standard practice in physical education and sports training, movement education was integrated into every level of physical education and athletics.

moving school An arrangement in colonial Massachusetts under which a teacher spent a few months in the schoolhouse in the town center, then spent successive 6- to 12-week periods in private houses in outlying precincts, teaching the children of those precincts. In 1692, the Massachusetts General Court had ordered all towns of 100 families or more to maintain elementary schools, each staffed by a certified Latinist. As the population expanded into outlying areas of a town, it became impossible for the town's children to attend, and the "rotating master" arrangement became standard until the mid-18th century, when outlying precincts began building their own independent schools.

Mrs. Slack's The Instructor: or, Young Man's Best Companion A widely used manual of self-instruction for young men without formal education, published in 1748 by B(enjamin) Franklin and D. Hall and possibly written by Franklin.

Mueller v. Allen A 1983 U.S. Supreme Court decision upholding the constitutionality of a Minnesota law that granted parents limited tax deductions for certain costs of secular education and educational services provided by private and parochial schools. The law allowed parents of students in kindergarten through twelfth grade in private and parochial schools to deduct up to \$700 a year from their taxable income. The deductions were limited to secular expenses such as student transportation, purchase of certain school materials and enroll-

ment in special courses such as driver education. Opponents of the law called the statute a means of providing public aid to church-affiliated schools, which made up the majority of private schools in Minnesota. The Court disagreed, saying that the law met the Court's three-part test in earlier decisions allowing some limited forms of state aid to nonpublic schools if such aid had a secular purpose, had a primary effect of neither advancing nor inhibiting religion and avoided fostering "an excessive government entanglement with religion."

multibasal reading program An elementary school reading instruction program using more than one type of basal reader in each grade.

multicultural education An adaptation of the primary and secondary school curriculum to recognize and teach the contributions of the different cultural, ethnic, racial and social groups that make up American society. A long-term outgrowth of the civil rights movement, multicultural education programs simply eliminate the cultural biases that had traditionally been built into textbooks and classroom presentations of American public schools. In effect, most traditional United States public (and private) school education prior to 1954 taught the history of a nation run by white males of Anglo-Saxon Protestant heritage, identifying blacks only as slaves, depicting American Indians as little more than an obstacle to westward expansion, seldom mentioning women, and classifying as "immigrants" the myriad of other racial, ethnic, religious and national groups that peopled and built the United States.

The 1954 U.S. Supreme Court decision ending racial and all other segregation brought together students of different races, genders, religions and national origins in schools and classrooms across the United States for the first time. Students asked for, and their parents

demanded (often in court), a more accurate presentation of American history, literature, social studies and science. The result was the multicultural educational thrust, for which textbooks have been rewritten and teachers retrained to reflect American society's purported ideals about equality. Now the norm in many schools, multicultural education has been standard in Israeli education since the nation's founding, and it has been standard in Britain for many years, but it has come under sharp criticism in many American communities, in part because of its inclusion of homosexuals among the minority groups receiving recognition and respect.

Unlike specific courses that focus on the history, contributions and literature of a specific group, such as black studies or women's literature, multicultural education is not a course or a formal curriculum, but usually a mere reformulation of a school's existing curriculum to make it more objective culturally.

More recently, however, a new form of multicultural education has been introduced in some elementary schools, where children recreate an African, Asian or other cultural environment and spend several hours of each school day pretending to be members of such foreign cultures. Thus, a class might convert their classroom into a Chinese village, building models of Chinese homes or perhaps the Great Wall, and decorating the room with Chinese art and artifacts. They might also dress in local costumes, prepare Chinese food and learn a few words of Chinese by listening to recordings of spoken or sung Chinese. Such multicultural education usually calls for children to spend as much as half of each school day for a half-year or full year learning about such foreign cultures in the context of their academic curriculum. The technique has come under considerable criticism because there is no comparable effort to teach children their own American culture and, in some instances, no emphasizing of academic education.

multimedia instruction The simultaneous use of more than one medium to produce a complete learning unit. There are many approaches to multimedia instruction, the most current being the so-called wired classroom, which permits students, individually or simultaneously, to use their personal computers to access all but limitless textual and audiovisual instructional and reference materials from sites anywhere on Earth. Wired classrooms link student computers by cable or telephone wires to data resources anywhere in the world—live, taped or printed. Live hook-ups permit interactive question-and-answer segments, and, at the touch of a button, teachers can obtain any of a variety of materials specifically designed for the day's lesson. The first wired classrooms were equipped to receive only taped television newscasts, but, by 2000, most American classrooms were either equipped or in the throes of being equipped with access to the Internet and the World Wide Web.

Prior to the development of the wired classroom, multimedia instruction depended largely on tape recorders, slide and film projectors and classroom displays of graphics, art and other exhibits. Commercially prepared multimedia software kits—usually on CD-ROMs—are available to encourage self-instruction in a variety of fields—basic reading and arithmetic for elementary school children, for example, and foreign languages for secondary school students.

(See also COMPUTERS; DISTANCE LEARNING; INTERNET; TELELECTURE; VIRTUAL CLASSROOM.)

multiple-choice test An examination consisting of questions that give students a choice of several possible answers with which to complete a statement or solve a problem. Only one of the answers is usually correct, although some tests present questions in which two or more answers may be partially correct, but only one

is entirely correct. Multiple-choice tests are popular among teachers because they are easy to construct, easy to score, can be used for virtually all subject matter and take less time to administer, thus preserving more classroom time for active instruction. They are popular among school administrators because they cost only \$4 per student to administer, correct and score, compared to as much as \$100 per student for a more comprehensive assessment test. And the tests are usually popular among students because they require little original thought or creative effort.

For the latter reason, they have become the target of criticism from educators and educational reformers who claim they are simply a labor-saving device for teachers who can accumulate an artificially inflated record of success with students by “teaching the test.” In the meantime, students fail to learn to reason and solve complex problems. Although educational reformers have managed to force producers of standardized tests to reduce the number of multiple-choice questions used on assessment tests, school administrators continue to be opposed to the teacher time investment required for correcting the more searching PERFORMANCE TESTS that depend on complex analysis of student essays.

Multiple Intelligence Theory A theory that there are at least eight universal types of intelligence in humans, each neurally based and, therefore, genetically determined: linguistic, logical-mathematical, musical, spatial, bodily-kinesthetic, intrapersonal, interpersonal and naturalist. Developed by Harvard psychologist Howard Gardner, the highly controversial theory has fed the prejudices of many teachers and school administrators that many children may be congenitally unable to learn certain types of material and that academic TRACKING is the most practical, effective way of helping such children through the schooling process.

Gardner’s theory emerged from his work in the 1970s with both gifted children and victims of brain damage. He found that gifted children were usually gifted in only one or two areas, such as music or mathematics, while the brain damaged lost specific skills, which, depending on the damaged areas of the brain, he was able to categorize and isolate into seven specific mental faculties that all human beings possess in varying degrees. He also concluded that each intelligence determines how individuals learn and the degree of success they will ultimately achieve in school and the workplace—although he adds that concentrated effort can improve each intelligence and any failure to exercise each intelligence will allow it to wither and all but disappear. Critics retort by calling what Gardner describes as multiple intelligence as nothing more than specific talents. Moreover, they point out that Gardner has never supported his theory with scientific studies or testing procedures.

(See also INTELLIGENCE.)

multiversity A colloquialism, or jargon, for the largest of American universities, such as the University of California, composed of a gargantuan main campus and innumerable, semi-autonomous satellite campuses, each with a variety of undergraduate and graduate schools, recreation and cultural centers, libraries and athletic facilities.

museum An educative institution for procuring, preserving, studying, storing and exhibiting objects of artistic, historic or scientific interest. Museums may be privately or publicly owned and operated as profit-making or non-profit institutions. Derived from the Greek word *mouseion*, meaning “temple of the Muses,” the first museum was founded in Alexandria, Egypt, by the Greek ruler of Egypt Ptolemy I in 290 B.C. Used as a library, lecture hall, botanical garden and astronomical observatory, it

also housed statues and portrait busts. In one respect, at least, such displays were not new, for the temples of ancient Greece were also filled with statues and paintings, as well as vases, gold and silver—all dedicated to the gods but on display for the public to see and enjoy. Roman temples added gardens, baths and theaters, along with booty from foreign wars. During the Middle Ages, the churches and monasteries of Europe added jewels, manuscripts and saints' relics to the statuary and paintings that, by then, were standard fare of such public collections. Many cathedrals sold artifacts from their treasuries to finance wars, and their holdings rose or fell depending on whether their lords were victorious in battle.

The modern museum has its roots in the 17th and 18th centuries, when European nobility began opening specific rooms of their palaces for viewing by invitation during certain times of the week. As the nobility were overthrown and their palaces seized by popular governments, the state gradually acquired and continues to maintain control of the huge palaces of Europe and their great art collections.

The American museum developed quite differently, having its roots firmly tied to BENJAMIN FRANKLIN'S Philadelphia Library Co., founded in 1731, and the forerunner of American public libraries. Once well stocked with books, the library added scientific apparatus, fossils, specimens and other curiosities to supplement the information found in books and thereby became "a more complete instrument for the storing and diffusing of knowledge." The personal and institutional libraries that emerged thereafter followed the Philadelphia Library's example. Some became quite specialized. Philadelphia physician and anatomy professor Caspar Wistar, for example, amassed a collection of specimens that became the basis for the University of Pennsylvania's anatomical museum. New York botanist-physician David Hosack collected mineral specimens that he gave to the COLLEGE OF NEW

JERSEY. In the 1750s, HARVARD COLLEGE developed a "Repository of Curiosities," which expanded the scope of American museum collections and, a century later, became the University Museum in Cambridge.

None of these was open to the general public. In 1773, however, the Library Society of Charleston put together a collection of materials that displayed the natural history of South Carolina and, after considering "the many advantages and great credit that would result," became the first museum in the American colonies to open its doors to the public. Even after museums opened to the public, neither students nor the general public showed much interest in them and they stood empty most of the time. It took two brilliant entrepreneurs with extraordinary marketing skills and a sense of showmanship to turn the American museum into a mass educative institution. What each realized was that few Americans attended school and that they thirsted for easily palatable knowledge.

Philadelphia engraver CHARLES WILLSON PEALE had started painting miniature portraits of colonial leaders in 1777, while an officer in the Continental Army. In 1782, he decided to commemorate the war and its heroes by opening a portrait gallery in an exhibition room he added to his home. Two years later, a German scholar asked Peale to make sketches of some mammoth bones, which Peale put on display in his gallery and which soon drew swarms of curious visitors. Intense public interest convinced him to convert his portrait gallery into a museum whose displays would present a history of the development of the entire world of nature. To enhance public enjoyment and instruction in the new museum, he spent two years, from 1784 to 1786, developing a new technique of "moving pictures," which combined a series of painted glass transparencies he made with sound and lighting effects that appeared to show nature undergoing various changes before the viewer's eyes.

He was now ready to launch his new enterprise. His museum was not only inundated with eager visitors, he was also soon deluged by contributions of birds, snakes, fish, fossils, insects, minerals and a variety of living animals, including bears, monkeys, parrots, an old eagle and other beasts, plus an equal variety of dead animals, including the bones of a mastodon, whose standing skeleton he reconstructed. He moved his museum into the abandoned Pennsylvania State House and called it, simply, "MUSEUM: GREAT SCHOOL OF NATURE." A sign over a second entrance read, "SCHOOL OF WISDOM: The book of nature open—explore the wondrous work, an institute of laws eternal." Aside from the never-before-seen exhibits, the museum, which supported Peale quite handsomely the rest of his life, offered lectures for those who wanted a greater depth of information and, of course, the great gallery of portraits of American heroes, whom Peale had painted.

Peale's museum, which his sons took over after he retired in 1810, became the model for a host of other, similar museums. In New York, the Tammany Society opened the American Museum in 1791, and Peale's son Rembrandt, also a gifted artist, opened a second Peale's Museum in Baltimore, where his own paintings became famous. A second Peale son, Rubens, opened still another Peale's Museum in New York in 1825. The depression of 1837 forced the American Museum to the brink of failure and Peale's New York Museum into bankruptcy. In 1841, PHINEAS T. BARNUM snapped up both institutions. Then an itinerant showman managing traveling troupes and exhibits of curiosities, he merged the two museums, added new exhibits, built stages for side-shows and for formal entertainment, and continually flooded New York City with publicity about various "transient attractions" that appeared "for a limited time only": educated dogs, jugglers, ventriloquists, giants, dwarfs,

singers, musicians, Indians performing war dances, mermaids and "a wilderness of wonderful, instructive, amusing realities."

In effect, Peale had converted the museum into an institution of entertaining instruction and Barnum reconverted it into an institution of instructive entertainment. Throughout the 1870s, Barnum's Museum was "the town wonder [and] the town talk," and it drew hundreds of thousands of visitors from around the world. It was moved into new, larger quarters three times. All eventually burned down, but the Barnum Museum left Barnum a wealthy man, and it left what eventually became the AMERICAN MUSEUM OF NATURAL HISTORY with a fine collection of specimens, including the skeleton of "Jumbo" the elephant.

But the Peale and Barnum varieties of the American museum were not the only models. While they were entertaining the public at large, smaller, specialized museums dedicated to scholarship were rising: the Massachusetts Historical Society in 1791, "to seek and find, to preserve and communicate literary intelligence, especially in the historical way"; the American Academy of Fine Arts in 1802, to collect copies of European sculpture, architecture and painting, as teaching tools for young American artists and as a means of edifying the public; the New York Historical Society in 1804; the Pennsylvania Academy of Fine Arts in 1805; and the Academy of Natural Science, in Philadelphia, in 1812. Most, however, were reserved for scholars and had little interest for the general public.

As the post-Civil War era produced huge fortunes for industrial entrepreneurs, many of the latter adopted the notion set forth by ANDREW CARNEGIE that wealth carried with it public responsibility. The eminence he had attained founding libraries soon enticed others of wealth to contribute to the founding of public institutions. Out of this public benevolence emerged several hundred museums in all sizes and shapes and with a wide variety of collec-

tions. The giant art museums included the Philadelphia Museum of Art, the METROPOLITAN MUSEUM OF ART, the BOSTON MUSEUM OF FINE ARTS and the Chicago Art Institute. Smaller cities boasted smaller art museums such as the Rhode Island School of Design Museum of Art, in Providence, and the Wadsworth Atheneum, in Hartford, Connecticut. The largest cities also boasted giant science museums such as the American Museum of Natural History, in New York; the Academy of Natural Sciences, in Philadelphia; the FIELD COLUMBIAN MUSEUM, in Chicago; and the National Museum of the SMITHSONIAN INSTITUTION, in Washington. Meanwhile, many colleges and universities had opened their own art and science museums, and many cities opened history museums ranging from the New-York Historical Society to historic houses, such as Washington's Headquarters, in Newburgh, New York.

By 1910, there were 600 museums in the United States, and by 1939 the number had climbed to about 2,500, most of them built after World War I. Although most, from the day they first opened their doors, publicly proclaimed their dedication to public education, few actually welcomed the public. In fact, most saw their mission as preservation, custodianship, research and, only occasionally, public display, which they feared would bring ruin to their collections. Some maintained limited educational facilities, such as small schools for the instruction of advanced artists; others allowed scholars to use their facilities for research. The Boston Museum of Fine Arts was among the exceptions. Opened in 1876, it saw itself as an educational institution from the start, operating a School of Drawing and Painting and opening its doors to the public, free of charge, two days a week.

The debate over the public, educative responsibilities of museums raged on throughout the first half of the 20th century. "If a library be not a live educational institution, it

were better never established," argued JOHN COTTON DANA, the founder and innovative curator of the Newark Museum in New Jersey. "A museum is an educational institution set up and kept in motion that it may help the members of its community become happier, wiser and more effective." Dana had the support of Laurence Vail Coleman, author of the first survey of American museums. An outspoken advocate of the concept of the museum as an educative institute, Coleman published his massive three-volume work entitled *The Museum in America: A Critical Study* in 1939, when museum construction had reached its peak. "Heretofore," he wrote, "teaching has been largely the business of a few conventional agencies—the school and the college, in particular—but observers see that some of the less practical agencies, including museums, are now . . . swinging into educational work . . . because they have collections that must inevitably be drawn upon for interpreting nature to man and man to himself."

By 1939, the Great Depression and the closed-door posture of many museums had alienated the general public. Declining attendance was threatening many with bankruptcy. Metropolitan Museum of Art director Francis Henry Taylor warned his colleagues in the American Association of Museums, "We have reached a critical period in American museums. . . . It is impossible for us to continue as we have done in the past. The public is no longer impressed with the museums and is frankly bored with their inability to serve it. The people have had their bellyful of prestige and spending of vast sums of tax-levied or tax-exempted funds for the interest and pleasure of the initiated few."

After World War II, Taylor's admonition had its desired effect, as museums across the United States transformed themselves into "people's palaces," staging popular "blockbuster" exhibits, complete with entertaining,

instructive audiotapes visitors could play on individual headsets that “guided” them through the exhibits. Museums also offered the public various types of membership that entitled them to private showings of special exhibits, receptions and even guided overseas travel in the company of scholars. Many museums have weekly cocktail receptions for the public, complete with chamber music and other types of entertainment. Almost all stay open at least one or two evenings a week to accommodate a wider range of visitors.

In addition to expanded entertainment programs, almost all museums have also expanded their educational functions and provide a wide variety of active, formal educational programs for schoolchildren of all ages, for adult amateur artists and scholars, and for professional artists and scholars. Many also have working relationships with nearby colleges and universities and participate in joint education programs. Many museums also make much or even all of their collections publicly available for viewing and study worldwide on the Internet.

music In education, a wide-ranging course of study, beginning in kindergarten and continuing through elementary school and college and into university graduate school. Music studies begin with simple training of the ear and voice, continue through training in the use of various instruments and techniques of musical composition and ultimately move into advanced theory and composition and musical performance.

The roots of American musical education were planted in the first medieval English universities, which included the teaching of music as an integral part of theological education. As these institutions became secularized, instruction in music, along with dancing and singing, grew less technical and eventually constituted part of a broader sphere of instruction in “manners” for the highborn. The serious study of

music left the classroom and was relegated to private tutors. In early Puritan America, music and other forms of joyful expression were seen as sinful. In any case, the exigencies of life in the American colonies left little time for the study of anything but the most practical subjects. When permitted, music instruction in “common schools” and churches was limited to the learning and singing of hymns “to sweeten [the] severer studies.” Even after the secularization of many schools, it became little more than a recreational respite from more serious instruction. Students who sought more serious instruction either turned to private tutors or apprenticed themselves out.

In 1833, LOWELL MASON founded the first formal music school in America, the Boston Academy of Music, which offered vocal and instrumental instruction. At the time, Mason also tried to introduce musical instruction into Boston’s public schools. A year later, he devised a system of musical instruction for children based on Pestalozzian (see PESTALOZZI, JOHANN HEINRICH) methods, and in 1838 he began using his system to teach music in Boston public schools. By the end of that school year, he had been appointed superintendent of music and had introduced music instruction in the entire Boston public school system—the first such school music program in the United States. The program, which emphasized singing and reading of musical notation, was subsequently adopted by schools across the United States and became a standard part of the elementary school curriculum.

Considered by most Americans a form of recreation rather than an area worthy of serious study, music was seldom introduced into secondary school curricula until after World War II. Like artistic expression, serious musical study was seen by most Americans as reserved for a gifted elite, while music appreciation was seen as a benefit for the wealthy few who could afford to attend concerts and opera. As they had

in earlier times, serious students of music—even students of popular music—had to rely largely on private tutoring for instruction. With the spread of economic prosperity after World War II, schools across the United States used their expanded budgets to introduce students to more music and art, but they were not given the same priority as science and other more “practical” technology programs. Even academically advanced private schools relegated most music instruction to extracurricular activities.

As school budgets contracted during periodic recessions in the last half of the 20th century, music and art programs were the first to be cut from the public school curriculum. Where formal music instruction remains a part of the curriculum, it is generally designed to develop basic skills in listening and nonprofessional performing (singing), to teach the history and theory of music, and to impart an understanding of different musical forms (classical, jazz, blues) and the role of music in different cultures. Formal musical education usually begins in kindergarten with singing and clapping and tapping to rhythms. First grade students continue daily group singing, accompanied by student playing of percussion instruments. Also taught in first grade are basic music theory, the staff, notations, rhythms, pitch, volume, timbre and the ties of music to mathematics and physics. Students also begin composing their own simple melodies and take lessons on musical instruments such as recorders.

Second and third grade musical education teaches mastery of rhythmic and tonal elements of music and music notation, playing instruments and singing from sheet music, composition and the ability to identify names and sounds of orchestral instruments. Group singing progresses to more advanced works. Schools with outstanding music education arrange field trips to concerts, operas and ballets or arrange live recitals at school. Fourth

graders advance to choral singing, private instrumental lessons and development of musical literacy. Band, chamber music or orchestra instruction begins in fifth grade, and sixth graders are expected to develop sight reading skills while continuing their work in group ensembles.

Most middle school music programs concentrate on the study of the history of music, the biographies of major composers and music appreciation, allowing serious individual performers to continue their studies privately. As in high school, middle school choral and other group singing, as well as instrumental ensemble playing, is generally considered an extracurricular activity for which schools provide faculty supervisors who can often offer skilled instruction. At the high school level, music instruction, when required, is limited to a half-year or one-year survey of the history of music, along with music appreciation programs. Instruction for performing musicians is available only through private lessons, for which the student must pay, or through extracurricular activities. Depending on the school’s budget and its physical plant, these may include a school chorus or glee club, singing groups such as octets and quartets, a school orchestra, a school marching band, small chamber music, jazz or rock-and-roll groups and theater groups that stage musical productions. Although some specialized “magnet” high schools for the performing arts offer broad programs of musical education for secondary school students, such schools are open only to gifted students who must audition successfully to gain admission.

Only at college is a broad range of musical education available to the general student body, regardless of individual talent or previous musical education—usually in many areas, including theory, composition, performance, history and music appreciation. In addition to standard undergraduate courses, advanced instruction in each of these areas is available at

many graduate schools and at specialized music institutes.

Mutual Education and Cultural Exchange Act (Fulbright-Hays Act) Enabling legislation passed by Congress in 1961 to permit American teachers to participate in teacher exchange programs in countries that have signed participating agreements with the United States. Administered by the Department of State, with help from the Department of Education, the program arranges for American teachers to teach in schools overseas, while their counterparts teach in the United States.

Myrdal, Gunnar (1898–1987) Swedish economist, social scientist and Nobel laureate in economics whose monumental study of American life published in 1944 forced liberal American intellectuals to confront their failure to provide equal educational opportunities to blacks and other disenfranchised Americans. Engaged by the CARNEGIE CORPORATION OF NEW YORK in 1938 to study the social condition of American blacks, Myrdal produced the landmark work *An American Dilemma: The Negro Problem and Modern Democracy* (1944). What he found was that blacks could not vote in many parts of the United States and, when permitted to attend school, had access to only inferior education. For blacks, as well as Irish, Italian, Polish, Hispanic, Jewish and Roman Catholic Americans, Native Americans and Asian Americans, vocational as well as educational opportunities were limited. Although liberal intellectuals including JOHN DEWEY

proclaimed the United States a land of inclusive politics and education, there was little question that widespread discrimination based on race, gender and ethnicity was the rule in the educational, political and business establishments.

Myrdal noted that Americans believed outwardly in the American creed of “liberty, equality, justice, and fair opportunity for everybody,” but inwardly they believed in the inferiority of certain groups and, depending on their circumstances or self-interest, they acted on both sets of beliefs. The “American dilemma” was his term for the contradiction between the creed that most Americans professed and their denial of the most basic civil, political and educational rights to blacks. “The status accorded the Negro in America represents nothing more and nothing less than a century-long lag of public morals.” Myrdal defined the reconciliation of “creed and deed” as the most pressing post-World War II issue for Americans.

Myrdal’s charges were especially stinging for American academicians who routinely taught the American creed to those students they admitted, while refusing admission to students they deemed inferior on the basis of race, gender or ethnicity and, therefore, refusing to teach them. At the time, private institutions such as Harvard, Yale, Princeton and many others, along with most major public institutions, not only did not admit women as undergraduates, they also routinely used quotas to limit the admission of virtually every racial, religious and ethnic group other than white Anglo-Saxon Protestants.

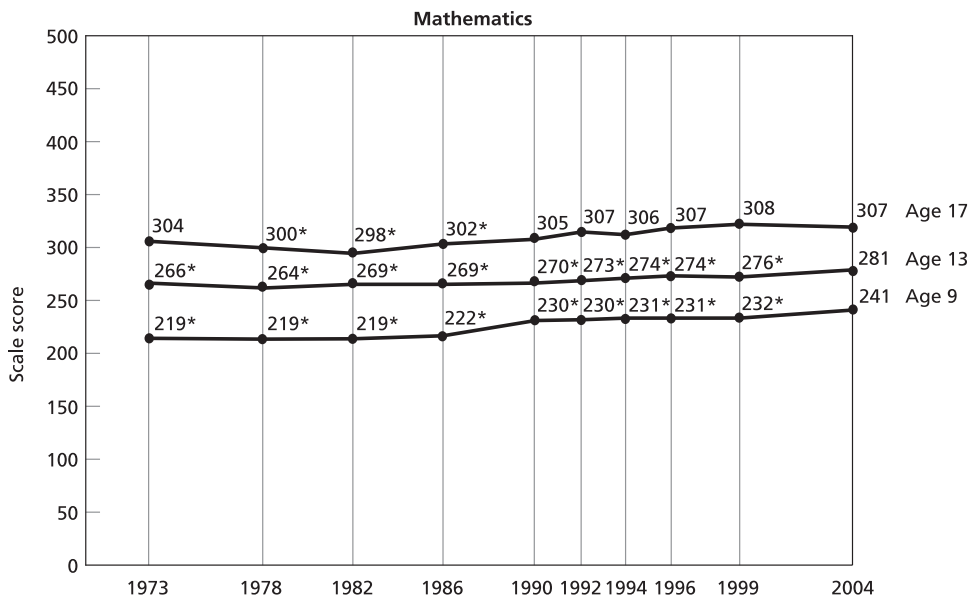
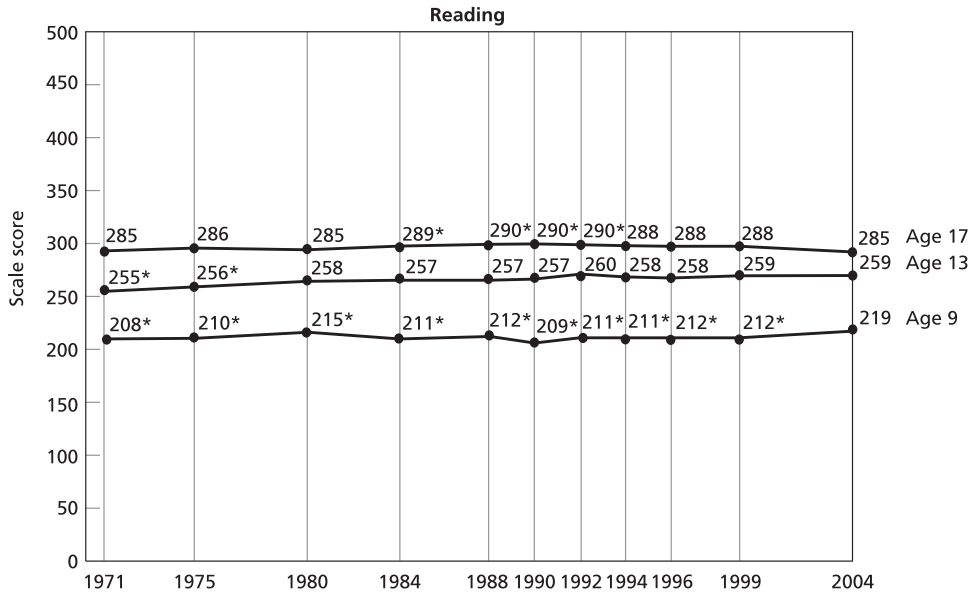
National Assessment of Educational Progress (NAEP) A national testing program organized by the EDUCATION COMMISSION OF THE STATES for measuring the knowledge and skills of nine-, 13- and 17-year-old American students. Often called the "Nation's Report Card," the program tests student knowledge in reading, writing, literacy, mathematics, science, technology (including computer competence and literacy), history, geography, civics, music, art, literature and occupational attitudes. Tests in one or more areas, but not all, are held annually, and results are issued on a state-by-state as well as a national basis.

Although the tests date back to a voluntary testing program started by the Education Commission of the States in 1966, they did not receive a congressional mandate and funding until 1986. The decision to begin such testing came after compulsory, universal public education had reached its initial post-World War II goal of reducing high rates of illiteracy in the United States that military conscription had uncovered. That goal proved costly, and those who paid the ever increasing costs of public education—that is, tax-paying property owners and their elected representatives—demanded to know how far beyond literacy the outcome of public education actually reached.

NAEP has been measuring that outcome ever since by periodically testing fourth, eighth and twelfth graders across the nation for profi-

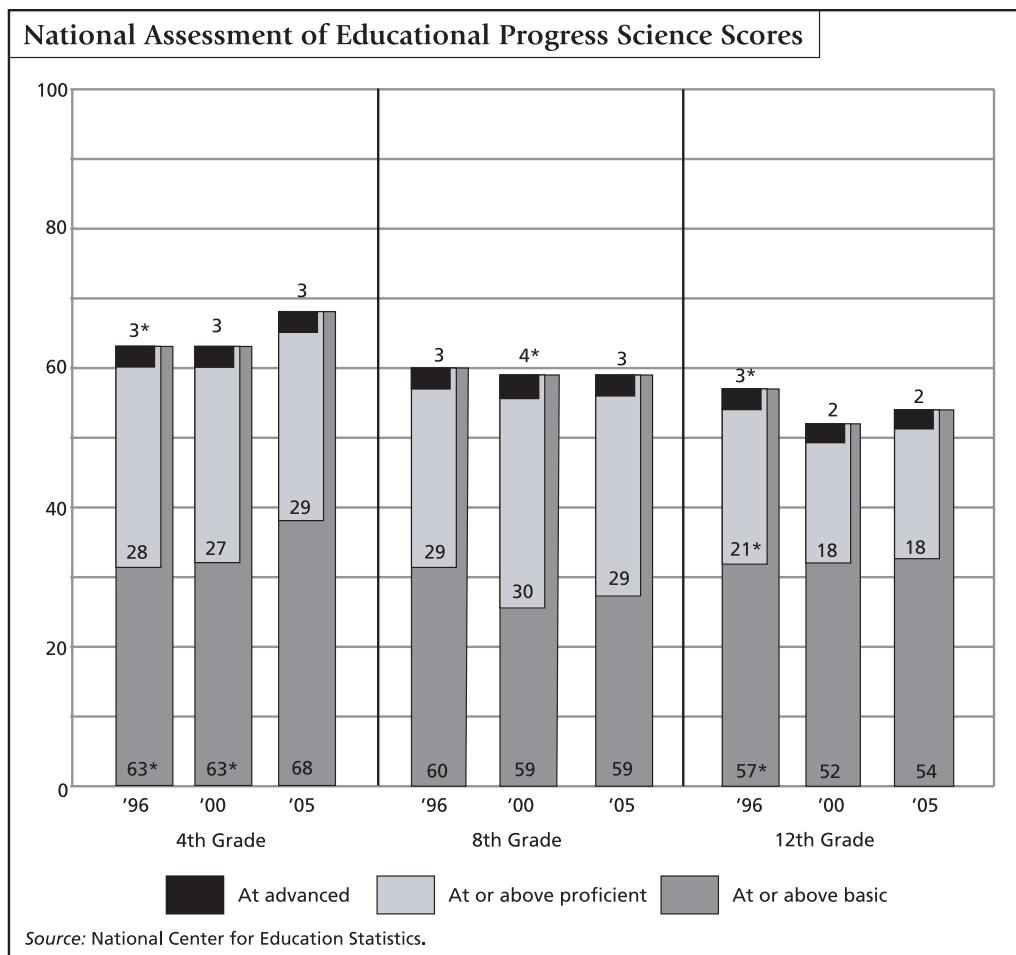
ciency in reading, writing, history, mathematics, science, civics, geography and other subjects, measuring each on a scale of 0 to 500, with a score of 300 or higher indicating "an ability to find, understand, summarize and explain relatively complicated informational material." A score of 250 in reading "implies an ability to search for specific literary information, interrelate ideas, and make generalizations about literature, science, and social studies materials." A score of 200 implies "an ability to understand, combine ideas, and make inferences based on short, uncomplicated passages about specific or sequentially related information." The lowest "passing" score of 150 demonstrates only a basic ability to follow "brief written directions and carry out simple, discrete reading tasks." Since the first NAEP tests in the 1970s, reading and math scores of American 17-year-olds have remained stagnant—a puzzling phenomenon in the face of evident progress in elementary school scores. As the charts below indicate, America's middle or junior high schools have evinced far less academic progress from their students than elementary schools have, while high schools have apparently failed entirely to lift the levels of academic proficiency of their students over the past four decades, despite federal and state investments of more than \$50 billion in education to raise the academic proficiency of American secondary school students. In mathematics, the NAEP

The Nation's Report Card



*Significantly different from 2004.

Source: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), Selected Years, 1971–2004 Long Term Trend.



standards define the lowest passing score of 150 as the ability to demonstrate “some basic addition and subtraction facts and to add two-digit numbers without regrouping. They recognize simple situations in which addition and subtraction apply.” A score of 200 demonstrates “considerable understanding of two-digit numbers and some basic multiplication and division facts.” To achieve a score of 250, test-takers must show an initial understanding of the four basic operations, be able to compare information from graphs and charts and have some ability to analyze simple logi-

cal relations. Performers at the 300 level can compute decimals, simple fractions and percents and can identify geometric figures, measure lengths and angles and calculate areas of rectangles. “They are developing the skills to operate with signed numbers, exponents and square roots.” At 350 or higher, test takers can apply “a range of skills to solve multi-step problems. They can solve routine problems involving fractions and percents, recognize properties of basic geometric figures and work with exponents and square roots.” When nine-year-olds (fourth graders) were tested in 2005,

their average scores had improved substantially by about 8.2%, but their average score of 237 nonetheless left them lacking an understanding of the four basic operations in mathematics—addition, subtraction, multiplication and division. Scores of 13-year olds improved only 4.1%, from 267 to 278.

Student progress was even more dismal in science, as evidenced by the accompanying chart, which shows a decline in eighth grade and twelfth grade scores from levels reached a decade earlier and a startling drop in the percentage of twelfth graders exhibiting basic knowledge of science or better—from 81% in 1996 to only 74% in 2005. Although third grade scores are impressive, the depth of knowledge at that level is so elemental as to bear little or no relationship to future achievement in the sciences, as is evident from the enormous decline in the proficiency of eighth and twelfth graders.

Widespread public dissatisfaction over the lack of substantial improvements in the academic proficiency of American elementary and secondary school students provoked sweeping congressional legislation to impose reforms on the nation's public schools—first, with the \$2 billion-a-year GOALS 2000 program to spur “systematic” state education reforms, and then with the even more ambitious NO CHILD LEFT BEHIND ACT OF 2001 (NCLB), which earmarked \$10 billion a year for national testing and required every school district to demonstrate year-to-year improvements in academic performance—or face the loss of federal subsidies to education. Aimed especially at schools with disadvantaged children, NCLB imposed higher teacher qualifications and required states to replace the curricula and staffs of schools that make no academic progress for four consecutive years. A long-term NCLB scheme set aside \$1 billion a year for READING FIRST, a program to retrain K–3 teachers and reading coaches in teaching methods designed especially for minorities and disad-

vantaged children. To continue receiving grants, reading instruction programs must produce progress in student reading proficiency and close the proficiency gap between white and minority students within two years.

Despite the huge investments, NAEP testing in 2006 found that nearly 30% of the nearly 62,000 schools that reported their results had failed to make “adequate yearly progress” or close the white-minority proficiency gap significantly, as seen in the chart below.

Fourth Grade	All	White	Black	Hispanic	Asian
Reading Scores	217	228	199	201	227
Gap 2005			-12.7%	-11.8%	0
Gap 1995			-13.1	-11.3	N.A.
Math Scores	237	246	220	225	251
Gap 2005			-10.6%	-8.5%	+2.0%
Gap 1996			-10.7	-9.4	N.A.
Eighth Grade					
Reading Scores	260	269	242	245	270
Gap 2005			-10%	-8.9%	0
Gap 1996			-12	-10.4	N.A.
Math Scores	278	288	254	261	294
Gap 2005			-11.8%	-9.4%	+2.1%
Gap 1996			-10.3	-9.1	N.A.

Ironically, the lack of substantial academic progress provoked cries of outrage from state education leaders—not at their own schools, but at the U.S. Department of Education for imposing inordinately high testing standards. The outcry forced Congress and, in turn, the Department of Education to allow each of the states to replace NAEP tests with their own, less demanding state tests to measure educational progress. Although the states agreed to continue NAEP testing, only state tests would determine academic proficiency under NCLB and, therefore, the amounts of federal government aid to education in each state.

(See also ACADEMIC STANDARD; STATES, EDUCATIONAL COMPARISONS; PROFICIENCY TESTING.)

National Association for Equal Opportunity in Higher Education An advocacy group representing historically black colleges and universities. Founded in 1969 to campaign for “educational parity for students, regardless of race, income or previous education,” its mission has gradually changed as the goal of black students and educators changed from integration to preservation of cultural identity. Indeed, many of the group’s 117 historically black institutions are now fighting efforts to integrate them with mixed-race state university systems that would, in turn, convert black schools into mixed-race schools. Members of NAFEO include two-year and four-year public and private institutions as well as graduate and professional schools with more than 200,000 students in 24 states, the District of Columbia and the Virgin Islands. In addition to acting as a collective voice for its member schools, the association serves as a clearinghouse of information on funding, grants, government contracts and legislation, and historical data on member schools. It also works to secure increased support for member institutions from federal agencies, philanthropic foundations and other sources and to increase participation of blacks in the leadership of educational organizations and in the membership of federal boards and commissions that deal with education.

National Association for the Advancement of Colored People (NAACP) The largest and historically the most influential American organization devoted to the cause of racial equality. Founded in 1909, the organization has been responsible for winning innumerable federal and state court decisions, including the landmark of 1954 *BROWN V. BOARD OF EDUCATION OF TOPEKA* case, in which the U.S. Supreme Court declared racial SEGREGATION of schools unconstitutional. The NAACP has also been responsible for mobilizing American public opinion and obtaining congressio-

nal passage of federal civil rights laws in 1957, 1960, 1964, 1965 and 1968, which outlawed racial discrimination (as well as other forms of discrimination such as ethnic, religious and gender) in job hiring, housing, public accommodations, and all other activities supported directly or indirectly by public monies. The NAACP has also been responsible for prison reform programs, for obtaining equal treatment and opportunity for blacks in the military, and for encouraging multicultural education programs to eliminate racial stereotypes in school and college textbooks and to add instruction in school curricula about the contributions of minority groups to the American nation.

The NAACP actually began in 1905, when W. E. B. DuBois summoned African-American leaders to a meeting to plan a program of “organized determination and aggressive action on the part of men who believe in Negro Freedom and growth.” Held in Niagara Falls, Canada, because of the refusal of hotels in Buffalo to admit blacks, the “Niagara Movement” foundered because of an aggressive, “go-it-alone” approach that alienated white sympathizers of the black cause. Indeed, the movement’s angry declaration demanding full equality produced nothing but a torrent of criticism—and race riots in Atlanta, Georgia, where DuBois was a professor of sociology at Atlanta University. A new committee was soon formed, and in May 1909 the National negro Committee, composed of both whites and blacks, met in New York. The conference attracted sympathetic white educators such as JOHN DEWEY, white social workers such as JANE ADDAMS and several Jewish and Protestant philanthropists willing to underwrite a new, more moderate movement dedicated to ending racial inequality by legal, nonviolent means. In 1910, the committee’s name was changed to the National Association for the Advancement of Colored People.

Mistrusting whites, radical black leaders such as Ida Wells Barnett, who was crusading

against lynching, refused to join. DuBois was the only black administrator from the original NAACP officers, and he became director of publications and research. For the next 24 years he edited, published and helped write the influential NAACP magazine, *The Crisis*. *The Crisis* became the only American publication that consistently reported on crimes against blacks and on black achievements, reviewing black poetry, literature and music and encouraging the "Harlem Renaissance" that introduced many white Americans to black culture.

In the 1930s, the NAACP began a carefully planned, 20-year legal campaign to achieve political and civil equality for American blacks. Instead of mounting what might have been an endless, strident campaign of lobbying state legislatures and the Congress for change, the NAACP adopted a quiet but brilliant legal strategy of attacking racial segregation on constitutional grounds—through the federal courts—and limiting its attack to one area only: education.

In 1896 the U.S. Supreme Court had upheld the constitutionality of racial segregation in *Plessy v. Ferguson*, so long as all separate public facilities for blacks were equal to those for whites. The NAACP now sought to prove to the courts that the separate-but-equal doctrine had failed in education and indeed could never succeed. In a series of six legal cases brought successively against school authorities in Missouri, Virginia, Oklahoma and Texas, the NAACP gradually chipped away at the separate-but-legal doctrine and the High Court's own legal basis for affirming its constitutionality in 1896. Each of the cases was filed far enough apart in time and place to avoid arousing the suspicion of white racist groups that might have organized nationally and mounted strong legal countersuits to delay each case indefinitely. The result was that when *Brown v. Board of Education* came before the High Court, the NAACP had at its command an arsenal of six precedents in the form of the Court's own

decisions declaring separate-but-equal education in specific instances to have been unconstitutional. In *Brown*, the Court had almost no choice but to declare racial segregation unconstitutional in the more general, national sense. The NAACP went on to lead the struggle for DESEGREGATION in every other area of American life over the next two decades, taking each recalcitrant state, county, town or school district to court to win court orders that eventually guaranteed blacks and other minority groups equal voting rights, equal access to all public accommodations, equal job and housing rights and equal opportunities and rights to participate in all areas of American life.

Although the national NAACP was disrupted by financial and intrapolitical disorders in the 1990s, its 2,200 semi-autonomous local branches across the United States continued the mission originally started by the national organization. Each branch is responsible for conducting local campaigns and legal actions to preserve civil rights. When needed, each branch may call on state NAACP facilities and national headquarters in Washington, D.C., for additional legal and financial help.

National Association of Intercollegiate Athletics (NAIA) A national governing body that organizes and administers college sports competition among 300 member colleges. Unlike the NATIONAL COLLEGIATE ATHLETIC ASSOCIATION, NAIA is an organization of small institutions, about two-thirds of which are private (mostly church-related) and about half of which have enrollments of fewer than 1,000 students. Founded in 1940, NAIA sponsors national championships in about a dozen sports, including baseball, basketball, football (two divisions), golf, outdoor and indoor track and field, soccer and tennis.

National Center for Education Statistics A branch of the U.S. Department of Education

that serves as the U.S. Government's principal agency for gathering and reporting statistics on all aspects of American education. The center publishes the definitive *DIGEST OF EDUCATION STATISTICS*.

National Center for Higher Education Management Systems (NCHEMS)

A small but influential nonprofit consulting and research center that has engineered major administrative and financial reforms in several dozen state college and university systems. Based in Boulder, Colorado, NCHEMS (pronounced "en-kems") originated in 1969 as a public research center financed by the U.S. OFFICE OF EDUCATION, the predecessor of the U.S. DEPARTMENT OF EDUCATION. Although it advises individual public colleges, NCHEMS focuses on developing and promoting policies that deal with statewide educational needs and reforms such as improving college graduation rates, job training and methods of measuring educational outcomes. NCHEMS has been a major force in promoting greater accountability and fiscal responsibility by college faculties and administrators and, as a result, has been the target of bitter criticism by officials at large, research-oriented public universities.

National Collegiate Athletic Association (NCAA)

The governing body of intercollegiate sports at most major American colleges and universities. Founded in 1906, the NCAA's 1,100 member colleges and universities set standards and rules for competitive sports, supervise regional and national college sports competition and about 70 championships in 20 men's and women's sports, and compile and record statistics, results and records in collegiate sports. There are three divisions in NCAA, each with subdivisions. The largest colleges belonging to Divisions I and II and the smallest to Division III. As a national organization, the NCAA is the ultimate authority in most intercollegiate sports.

Its executive committee and the director they elect are responsible for providing a periodic (annual) forum for discussion and legislation of NCAA rules and regulations, but they have sole discretion over administering those rules. Until 1984, the NCAA had sole control of negotiating rights to determine which college sports events would be televised, thus controlling the flow of billions of dollars in revenues within the American college community.

World War II produced a dramatic transformation of American collegiate sports and the NCAA. Before the war, for most collegians, sports was synonymous with games and recreation, usually reserved for the wealthy elite who did not have to work their way through college. World War II and the G.I. BILL OF RIGHTS provided federal government scholarships that sent tens of thousands of veterans who might not otherwise have attended college pouring onto campuses across the United States, thus popularizing college education and, at the same time, college sports. Meanwhile, television began transmitting professional sports to the general public, generating an insatiable appetite to watch what few had ever been able to attend in person. As TV cameras ran out of professional sports to broadcast, they began appearing at the stadiums and arenas of colleges with the best-known athletic teams—Notre Dame, the University of Michigan, Stanford University, the University of Southern California, and so on. More colleges began building huge stadiums and arenas and fielding appealing (and winning) teams by recruiting the most gifted young athletes they could find, enticing most with athletic scholarships that provided them with up to five years of free education, room and board and paid athletic expenses. As the colleges with the wealthiest contributors threatened to grab all the finest high school athletes, the NCAA slapped controls on athletic scholarships limiting each college in each division to a specific number of

athletic scholarships for each sport—85 football scholarships in the large Division I-A schools, for example; 63 in Division I-AA football; and so forth. Failure to abide by the limits risked schools' eligibility to participate in lucrative postseason NCAA-sponsored bowl games. The only NCAA rule on eligibility for an athletic scholarship was at least a C, or 2.0 (out of 4.0), high school average. U.S. Supreme Court decisions ordering racial desegregation of American educational facilities allowed American colleges to tap black communities for athletes.

As more and more college teams vied for fewer and fewer athletes, however, many schools offered scholarships to athletes who were academically unqualified to attend college—all under the aegis and approval of the NCAA, which by then was under the control of member-college athletic directors eager for revenues to maintain their athletic plants. In a few instances, college athletic officials and alumni bribed the most gifted athletes to choose one college over another. Accustomed to accepting bribes from coaches and "boosters," some college athletes accepted bribes to score more or less points to change the betting odds in favor of professional gamblers. After star college athletes began going to jail in the 1950s the NCAA intervened to protect the public image of college sports as a competition for unpaid amateurs. Passing strict new rules for recruiting high school athletes, the NCAA punished colleges that violated such rules by depriving them of the right to participate in NCAA-sponsored intercollegiate championships and the right to have their sporting events televised by national television networks, with whom the NCAA had become the exclusive negotiator for all member colleges.

Frustrated by the loss of revenue from an NCAA suspension, the University of Oklahoma (joined by the University of Georgia) sued the NCAA in 1984 and won a U.S. Supreme Court ruling that the NCAA had violated federal anti-

trust law by preventing individual schools from negotiating the rights to football telecasts. At the time, the NCAA had maintained exclusive control over negotiating rights to televised games between member schools. It chose which teams would be featured on television and at what times the games could be telecast. Most important, it controlled the division of TV revenues among the schools.

In addition to the recruiting scandals involving bribes, the NCAA was embarrassed in the early 1980s by revelations of "functional illiterates" attending colleges across the United States on athletic scholarships. Saddled with heavy practice, travel and game schedules, marginally qualified student athletes seldom attended classes and, when they did, found themselves unable to cope with the work. Athletic aides guided the athletes into the least demanding courses and pressured professors to give such athletes passing grades to keep the students eligible for athletic service for the financial benefit of their universities. Graduation rates of students receiving athletic scholarships fell to near zero at some schools. On average, only 33% of black football players and 23% of black basketball players graduated after six years at the 99 Division I-A schools with high-visibility sports programs, compared to a rate of 55% for the general student body.

College athletics generate an estimated \$25 to \$30 billion a year, or more than 10% of total college and university revenues, however, and many academicians have long preferred to ignore the question of unqualified athletes attending their schools on full scholarships. Although Division III schools, which make up the majority of NCAA members, are not permitted to award athletic scholarships, they nevertheless supported the policies of their larger colleagues because the huge revenues reaped by Division I and Division II schools benefited the athletic programs of all NCAA schools. Most NCAA college and university athletic programs

have an average of 20 sports, most of which, even after payment of student fees, produce financial losses. Revenues from popular big-time college sports such as football and basketball cover those losses and pay for intramural sports and individual recreation that benefit all college students, as well as providing facilities for a wide variety of sports such as field hockey and fencing that draw no paying customers.

The publicity of academically unqualified athletes attending college on athletic “scholarship” and failing even to attend classes provoked a group of college presidents to wrest control of the NCAA from athletic directors, and its board now consists of 13 college presidents, who make all policy decisions for the organizations. Beginning in academic year 2004–05, they imposed a handful of cosmetic reforms that regulate the number of permissible athletic scholarships on the basis of academic progress of each athlete as well as graduation rates. But the nation’s leading quarterback in 2005—winner of the prestigious Heisman Trophy the previous year—admitted he was taking only one course, dance, during his fifth year at the University of Southern California. Moreover, other changes in NCAA rules only opened the way for greater profits from sports at major colleges. The NCAA increased the number of games in the Division I-A football season from 11 to 12 and eliminated a ban on using footage of games and individual athletes in commercial films. In response to growing public interest in sports during football’s off-season, NCAA increased by two the number of athletic scholarships colleges can award in other sports—14 in gymnastics, 13 in volleyball, 20 in track and field and 20 in soccer.

Even as the NCAA was contending with the problem of academically ineligible athletes, the giant sports organization came under attack from another direction: women, who decried the lack of athletic opportunities at many coeducational institutions. Congress responded by

enacting the Education Amendments Act of 1972. Title IX stated, “No person in the United States shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any education program receiving federal financial assistance.” For NCAA coeducational schools, Title IX meant giving women sports facilities equal to those of men and providing women with an equal number of intramural and varsity sports as men. By 1997, 40% of all students participating on intercollegiate teams at major colleges and universities were women, and they received 41% of all sports scholarship dollars. Moreover, the colleges were spending 42% of their recruitment budget to attract women to their campuses. A decade earlier, the disparity between men and women in major college sports programs had been on the order of 10 to 1. The current male-female ratios are somewhat misleading, however, and are actually better than they appear because of the absence of female baseball, football and wrestling teams. If participants in “unisex” sports such as men’s football and baseball and female field hockey and softball are deducted from total participants, female participants outnumber males and make up 52.56% of all participants in organized college sports.

National Collegiate Athletic Association v. University of Oklahoma A 1984 U.S. Supreme Court ruling that the National Collegiate Athletic Association (NCAA) had violated federal antitrust law by preventing individual colleges and universities from negotiating the rights to football telecasts. At the time, the NCAA had maintained exclusive control over negotiating rights to televised football games between its 850 member schools since 1951. It chose which teams would be featured on television and at what times their games could be telecast. The NCAA also controlled the division of all television revenues among the schools.

In dissolving the remaining two years on the NCAA's contract with the American Broadcasting Co. and CBS Inc., the High Court held that the NCAA had violated the Sherman Act banning restraint of trade by acting as a cartel and limiting the number of college football games on television.

National Commission on Excellence in Education A 1983 panel named by Secretary of Education Terrel H. Bell to assess conditions in American public education, compare it with education in other industrialized nations and develop recommendations for improvement. Its report, *A NATION AT RISK*, stunned the entire nation and set the stage for a national reevaluation and massive reforms of American public education.

"If an unfriendly power had attempted to impose on America the mediocre educational performance that exists today," said the report, "we might well have viewed it as an act of war." It went on to propose national educational standards that would require every American to successfully complete four years of English, three years each of mathematics, science, social studies and a foreign language, and a half-year of computer science as a prerequisite for high school graduation. Pointing out that the average school year in the then-Soviet Union, the People's Republic of China and Japan averaged 240 days, the commission recommended that the average school year be extended from an average of 178 days to between 200 and 220 days, close to the same number of days as the average worker works in a year.

The report had a far-reaching impact on public education across the United States. Within 10 years, 27% of all public high schools had toughened their curricula and increased the amount of homework they assigned. About 40% lengthened their school years, and 70%—twice as many as the number 10 years earlier—adopted policies that kept failing students out

of extracurricular activities. By 2000, 49 states had introduced improved, statewide competency testing programs for students, while 39 states introduced some form of regular, periodic teacher evaluation programs. The states also increased average teacher salaries from \$21,641 in 1982–1983 to about \$40,000 by 2000. And the states increased average annual spending per pupil from less than \$3,000 to more than \$6,000.

The totality of these reforms, however, produced startlingly negligible improvements in student academic achievement. Most educators agreed that the reason for the failure lay not in the programs but in the sharp rise in the number of socially and academically dysfunctional students, whose low achievement more than offset gains of students in culturally advantaged areas. The number of students living in poverty increased dramatically during the 10 years following the report, as did the number of single-parent families and the gap between spending available to rich schools and poor schools. Poor, usually urban schools suffered, as a result, not only low quality education, but overcrowding, with as many as 5,000 students in schools built to house half that number. Most of the commission's proposals were nevertheless adopted in the GOALS 2000 plan codified by the U.S. government in 1994. Goals 2000 aimed at making "American students first in the world in mathematics and science achievement" and assuring that all American students leave grades four, eight and twelve able to demonstrate "competency in challenging subject matter." (See also MINORITY EDUCATION.)

National Commission on Reform of Secondary Education A group of citizens and educators organized in 1973 by the KETTERING FOUNDATION to study American public secondary education and develop recommendations to improve it. Its report was one of the first comprehensive sets of specific reforms and

foreshadowed increased public recognition of the need for extensive reformulation of the American approach to universal public education. The commission's report contained 32 specific proposals for improving secondary school education. Almost all have become standard elements of educational reform programs across the United States. Among them were the formulation of specific, published goals in each secondary school; expansion of career education services; reformulation of the secondary school curriculum and expansion of student support services; expansion of career education opportunities; provision of alternatives in each district to the comprehensive high school; increased use of instructional television; development of school security plans, including the maintenance of records of violence; elimination of corporal punishment; and elimination of sexism and racism in schools through reformulated educational programs to instruct students in the contributions of minority groups in American society—the last being a forerunner of MULTICULTURAL EDUCATION.

National Congress of Mothers An organization founded in 1897 to unite American mothers in a movement to improve child rearing, reform education, develop kindergartens and reform the penal system as it applied to children. The predecessor organization of the NATIONAL CONGRESS OF PARENTS AND TEACHERS, the National Congress of Mothers was an outgrowth of Clark University psychologist and founding president G. STANLEY HALL'S CHILD STUDY MOVEMENT, which captured the hearts and minds of tens of thousands of American mothers in the late 1890s.

Hall had enlisted women's clubs across the United States in gathering mountains of data about every element of their children's moral, intellectual and emotional development. His goal, which mothers everywhere embraced, was to develop a science of child development and, in turn, a science of education that moth-

ers and teachers alike could then study to assure the proper upbringing of American children. His colleagues at Clark University examined every aspect of children's development, from the roots of loyalty, lying and sexual behavior to fluctuating interests in literature, history, geography and arithmetic. Their conclusions produced a revolution in the way parents raised their children and the way they and their children's teachers approached education.

Hall urged schools to establish more kindergartens and teachers to extend the informality of KINDERGARTEN into the elementary grades. He urged reformulation of elementary school curricula to meet the needs, interests and developmental patterns of children—to make schools pedocentric rather than scholastic, as they had been for centuries.

Tens of thousands of mothers and teachers across the United States immediately embraced Hall's revolutionary new doctrine with a zeal that culminated in 1897, when ALICE MCLELLAN BIRNEY, an avid proponent of the kindergarten movement, issued an "official call" to American mothers to convene in Washington. Instead of the few hundred she had expected, some 2,000 showed up and formed the National Congress of Mothers. The congress passed resolutions for establishing a national training school for women to create a scientific motherhood "which shall in time correct the errors of the past and redeem the future by penetrating the mysteries of heredity and controlling its possibilities." The congress urged state and territorial governments to establish kindergartens in all public schools and training schools for kindergarten teachers.

With the financial help of cofounder Phoebe Apperson Hearst, the National Congress of Mothers grew and prospered. In 1908, it changed its name to the National Congress of Mothers and Parent-Teacher Associations, began publishing the monthly *National Congress of Mothers Magazine* (later renamed *Child*

Welfare Magazine) and issued innumerable pamphlets and, eventually, an eight-volume encyclopedia of child care called *Parents and Their Problems*. By 1915, its enrollment had swelled to 60,000 members. It reached 190,000 in 1920, 875,000 in 1925 and 1.5 million in 1930. It expanded its mission to include penal reform, including establishment of juvenile courts and separation of children from adults in penal institutions and orphanages. Borrowing techniques of the CHAUTAUQUA LITERARY AND SCIENTIFIC CIRCLE, member women's clubs organized weekly discussion groups to help educate parents in child rearing. Members also organized discussion groups in churches and settlement houses for poor women and even sponsored home visits to aid poor women burdened by too many children.

Gradually, as the congress succeeded in achieving most of its goals, its reform activities subsided. Although the National PTA, as it's often called, remains an active child advocacy organization and continues to promote parent education, the majority of the more than 6 million individual members (who now include fathers) tend to focus on improving schools in their own districts.

National Congress of Parents and Teachers (National PTA) A national child advocacy group working for parent education, school reform, and service to children, families and schools. Founded in 1897 as the NATIONAL CONGRESS OF MOTHERS, it serves as a coordinating organization for its 6 million to 7 million members in more than 23,000 local parent-teacher associations in the 50 states.

National Council for the Accreditation of Teacher Education (NCATE) The national accreditation organization for undergraduate and graduate professional education programs for elementary and secondary school teachers, school service personnel (counselors) and

school administrators. Organized in 1952 by the NATIONAL EDUCATION ASSOCIATION, the American Association of Colleges for Teacher Education and 11 other professional organizations, NCATE is the only nationally recognized accreditation agency in its field. NCATE standards for basic programs and advanced programs are detailed in its manual, *Standards for the Accreditation of Teacher Education*.

National Defense Education Act Federal legislation passed in 1958 providing \$3 billion in federal funds to improve science and mathematics education in the United States. The act was the result of the anger and frustration that swept the United States following the Soviet Union's success in launching the world's first space satellite—*Sputnik*. The Soviet success was particularly galling because it came without a word of advance publicity, following years of boastful remarks by American scientists and politicians about American superiority in missile technology. The sudden realization that the United States in any way trailed the economically backward Soviet Union in science and mathematics education, as well as space technology, provoked swift passage of the National Defense Education Act. It had three major provisions: to provide loans and fellowships to college and university students; to provide federal aid to states to improve mathematics and science education programs as well as foreign language studies; and to spur research into methods of improving teaching techniques.

National Diffusion Network (NDN) A U.S. Department of Education program established in 1974 for nationwide implementation of exemplary education schemes. The program is a three-step operation: assessment of innovative educational schemes, endorsement of those selected as exemplary and assistance (training, materials, etc.) to local districts that decide to implement a new scheme. The pro-

gram is laced with bureaucratic titles. The group that assesses new schemes is called the Joint Dissemination Review Panel, and the assessment process is called the JDRP Review. Once endorsed as exemplary, an innovative educational scheme earns the title of Developer/Demonstrator, or DD, and the state or school district that decides to adopt the new educational scheme is called a Facilitator.

In assessing new approaches to education, the JDRP uses six criteria:

1. Did the new approach produce a change?
2. Was the change statistically significant?
3. Was the change educationally significant?
4. What evidence proves that the change was a direct result of the new educational approach?
5. Can the new scheme be replicated elsewhere with the likelihood of achieving a similar change?
6. Is the evidence presented believable and interpretable?

School districts adopting educational programs approved by NDN receive appropriate training and technical implementation help. Costs of implementation are shared equally by NDN, the school or school district and the state.

National Direct Student Loan (NDSL) A program of low-interest loans to college and graduate school students repayable monthly over a 10-year period beginning six months after graduation. Originally called National Defense Student Loans, the program began with enactment of the NATIONAL DEFENSE EDUCATION ACT OF 1958, which provided loans and fellowships to college and university students as part of a broad-based federal program to improve science and mathematics education in the United States. Originally administered by colleges and universities, NDSLs eventually evolved into the Guaranteed Student Loan program, with commercial banks providing the funds and the federal gov-

ernment guaranteeing repayment and making up the difference between the low interest charged to students and the higher commercial rate the banks would ordinarily have received for their funds. GSLs eventually evolved into federal STAFFORD LOANS, with slightly different qualifying and repayment conditions.

(See also STUDENT LOANS.)

National Education Association (NEA)

The largest organization for education professionals in the United States, and, indeed, the largest single union, with more than 3.2 million members, including teachers, school administrators, support personnel and other school employees in 12,500 locals. Functioning both as a labor union and an organization dedicated to the improvement of education and the teaching profession, the NEA was founded in 1857, claiming to represent an education profession made up of college and university leaders, public school administrators, and teachers unified in their desire to improve American education.

By the end of the century, however, it became clear that the interests of the member groups not only varied from one to another, but also were often in direct conflict—so much so that most educators refused to join. In 1900, NEA had only 2,332 members. As early as 1870, school superintendents had formed their own Department of Superintendence within NEA, while male college and university educators formed the National Council of Education, which effectively dictated NEA policy. The virtually impotent female teachers in NEA formed their own Department of Kindergarten and Primary Education, but it had little effect in determining NEA policy. The latter centered on reorganizing the American system of education to accommodate (and Americanize) hordes of illiterate immigrant children who were arriving in the United States and filling schools to overflowing.

In 1891, at the insistence of Harvard University President CHARLES W. ELIOT, the NEA

appointed the famed Committee of Ten to reform the secondary school curriculum. Chaired by Eliot, it recommended a four-track secondary school system, two superior and two inferior. All students, however, whether bound for work or for college, would be required to study a substantial core curriculum of academic subjects, including English, mathematics, science, history, geography, civics and foreign languages. In 1893, NEA appointed the COMMITTEE OF FIFTEEN to reform elementary education; in 1895 it appointed a Committee on College Entrance Requirements. In the meantime, however, it ignored the growing chorus of complaints of women teachers who claimed they were being exploited by male administrators and all-male boards of education. At the time, female teachers earned half the salaries of male teachers, and they demanded that NEA help them obtain more job security, greater academic freedom, better working conditions and higher salaries.

In 1897, classroom teachers in Chicago organized a new Chicago Teachers Federation. Similar organizations formed in New York, Los Angeles, San Antonio, Washington, D.C., and other cities, and in 1902 they affiliated with the AMERICAN FEDERATION OF LABOR. In 1916, the Chicago Federation of Teachers joined with two other teachers' unions and another in Gary, Indiana, to form the AMERICAN FEDERATION OF TEACHERS. Unions in other cities signed up as locals of the AFT, and by the mid-1920s the AFT represented so many teachers that it threatened to eclipse NEA. NEA quickly changed course and actively sought to represent American teachers as an organization newly dedicated to the advancement of professionalism. It has been at odds with and continues to compete for members with AFT, which still operates under the banner of teacher rights. In the 1950s, as teachers grew more militant in their demands for higher salaries and better working conditions, AFT again threatened NEA's leader-

ship, and NEA reorganized many of its operations into a conventional labor union. It now engages in collective bargaining with school systems whose teachers it represents. It also represents faculty in nearly 400 institutions of higher learning. Teacher members can obtain insurance, legal services and other union benefits through NEA's local units.

NEA has not, however, abandoned its role as a professional improvement organization and as an advocate for improved education and educational reform. Among its many publications are the respected *Today's Education* and *NEA Reporter*, as well as a continual flow of research reports on teacher salaries, school finance, retirement systems, racial segregation in schools, educational reform and other topics of importance to education.

National Foundation on the Arts and Humanities A U.S. government agency dedicated to supporting the development and growth of the arts and humanities in the United States. Created by a 1965 act of Congress, the foundation has three divisions: the National Endowment for the Arts (NEA), the National Endowment for the Humanities (NEH) and the Federal Council on the Arts (the latter coordinates the work of the NEA and NEH with other federal programs). Passage of the National Foundation on the Arts and Humanities Act of 1965 followed several years of increased government spending on science and mathematics education as part of the NATIONAL DEFENSE EDUCATION ACT OF 1958. The result at many colleges and universities was a vast expansion of mathematics and science departments and science laboratory facilities—often at the expense of the humanities and arts. Leaders in these two fields, both in and out of the academic community, began demanding government subsidies to match those flowing into the sciences, arguing that knowledge of the social sciences and the development of aesthetics were as

important to national life as scientific knowledge. Swept to power by what at the time was the largest plurality in the history of American presidential elections, President LYNDON B. JOHNSON was able to push through Congress the National Foundation on the Arts and Humanities Act.

The National Endowment for the Arts was created to promote growth and development of, and education in, the arts in the United States by funding the dissemination of the arts through supporting art exhibits, underwriting cultural institutions, funding individual artists and helping to preserve the American national heritage. The National Endowment for the Humanities was designed to encourage creation and dissemination of knowledge in the humanities—including language, linguistics, history, political science, public issues, contemporary values, philosophy, archaeology, history of the arts—through grants to individuals, groups, institutions, schools, colleges, universities, museums, public television stations, libraries, public agencies and private nonprofit groups. Neither endowment was designed to limit its efforts to support of elite institutions or “classical” forms of art or knowledge. The result has been support for development and dissemination of many forms of music, art and literature to many different audiences with many different tastes. NEA has provided grants for the Metropolitan Opera, jazz histories, Puerto Rican folk music festivals, belly dancing, basket weaving by Mohawk Indians and quilt making by African-American Mississippians. NEH has funded studies of John Locke, American Indian religions, Cuban refugees in Florida and a host of other disparate topics.

The National Foundation on the Arts and Humanities Act had at least as many consequences for education in the arts and humanities as the National Defense Education Act had for mathematics and science education. Over

the first four decades of their existence, annual appropriations for the two endowments expanded from \$2.5 million each in 1966 to about \$100 million for the National Endowment for the Arts in 2002 and more than \$110 million for the National Endowment for the Humanities. Matching grants added more than \$16 million to funds available at NEW. Moreover, other government agencies, such as the CORPORATION FOR PUBLIC BROADCASTING and the SMITHSONIAN INSTITUTION, along with many state agencies, complemented the NEA and NEH funds flowing into the development of the arts and humanities, as did the sale of tickets, catalogs, brochures and souvenirs. The net effect was a torrent of new funds flowing into development of the arts and humanities at schools, colleges, universities, libraries, museums and other cultural institutions, which used NEA and NEH funds not only to extend the boundaries of the arts and humanities but also to popularize culture as never before in the history of the United States.

National Goals for Education Improvements in American public education that were adopted as official goals by the federal government in 1990 and codified into the GOALS 2000 program. With a target fulfillment date of the year 2000, the program gave highest priority to these goals:

- All children in America would start school ready to learn.
- The high school graduation rate would increase to at least 90% (compared to 75% at the time of the legislation).
- American students would leave grades 4, 8 and 12 having demonstrated competency in challenging subject matter, which the U.S. Department of Education defined as including “English, mathematics, science, history, and geography. In addition, every school in America will insure that all students learn to use their minds in order to prepare them for responsible

citizenship, further learning and productive employment in a modern economy.”

- American students would be first in the world in mathematics and science achievement.
- Every adult would be literate and would possess the skills necessary to compete in a global economy and to exercise the rights and responsibilities of citizenship.
- Every school in America would be free of drugs and violence and would offer a disciplined environment conducive to learning.
- Teacher training would be improved significantly.
- Local schools would create and develop programs to enlist greater parental involvement in their children’s education.

National Honor Society An organization sponsored by the National Association of Secondary School Principals to honor outstanding academic achievers in the tenth, eleventh and twelfth grades of high school. Limited to students with a minimum grade point average equivalent to 85%, the National Honor Society was created in 1919 by the principal of Omaha, Nebraska’s, Central High School “to counteract a prevailing tendency among secondary schools to place undue emphasis upon individual performance in the various athletic events.” Well over 20,000 public and private high schools now have National Honor Society chapters, with members in each elected by a faculty council made up of the principal and at least four members of the faculty.

National Institute of Education (NIE) A now-defunct division of the U.S. DEPARTMENT OF EDUCATION, created by Congress in 1972 as an agency for educational research and development. NIE grants were designed for long-term research and development programs that promoted equality of educational opportunity and improved educational practices. In 1985, the U.S. Department of Education formed an Office of Research, which absorbed all NIE functions.

National Labor Relations Board v. Catholic Bishop of Chicago A 1974 ruling by the U.S. Supreme Court that the National Labor Relations Board lacked the power to intervene in disputes between a group of seven parochial schools in Chicago and Northern Indiana and lay faculty unions that the schools had refused to bargain with. The Court upheld a lower court ruling that such intervention represented a violation of the First Amendment prohibition against government interference with the free exercise of religion.

National Labor Relations Board v. Yeshiva University and Yeshiva University Faculty Association v. Yeshiva University A combined 1980 U.S. Supreme Court ruling that most faculty unions at private colleges and universities were not protected by federal labor law. In combining the two cases, the Court found that most faculties at private colleges and universities played a “crucial role” in decision making and determining university policies and were, therefore, “managerial employees,” who did not come under the scope of the National Labor Relations Act. “The faculty’s professional interests as applied to the governance at a university like Yeshiva, cannot be separated from those of the institution,” said the Court’s majority decision. Faculty members at other private institutions might be protected by federal labor law if they had no direct control of university policies, but such was not the case at Yeshiva.

National Merit Scholarships College scholarships ranging from \$250 to \$2,000 a year for one to four years, awarded annually to academically qualified high school students by the National Merit Scholarship Corporation. The nonprofit corporation was founded in 1955 with a \$20 million grant from the FORD FOUNDATION and a \$500,000 grant from the CARNEGIE CORPORATION OF NEW YORK and is now

backed by more than 1,000 major corporations and private organizations.

The corporation offers two types of scholarships each year—National Merit Scholarships, open to all high school students, and National Achievement Scholarships, open only to African-American students. More than 8,000 National Merit Scholarships, ranging from \$500 to \$2,500 and totaling about \$35 million, are awarded each year. Awards are based on the PRELIMINARY SCHOLASTIC ASSESSMENT TEST—NATIONAL MERIT SCHOLARSHIP Qualifying Test (PSAT-NMSQT), administered each autumn by the EDUCATIONAL TESTING SERVICE. About 800 National Achievement Scholarships are awarded to African-American students taking the same test. Half the awards are one-time awards of \$2,000, while the rest range between \$250 and \$2,000 and are renewable for four years.

More than 1.3 million high school juniors take the PSAT as a “practice test” for the Scholastic Assessment Test (SAT) college admission tests taken in their junior or senior year. Although PSAT scores are not seen by colleges and do not affect student chances for admission, they do serve to determine winners of National Merit Scholarships, which are awarded to about 1% of the students who take the PSATs in each state. Actual dollar amounts are awarded on the basis of financial need as well as test scores so that well-to-do students with high test scores receive less than a needy student with a slightly lower score.

Students with the highest 15,000 scores are automatically named National Merit semifinalists. About 14,000 of them are selected as finalists on the basis of their high school grades, extracurricular activities, school and teacher recommendations and an autobiography and essay each must write. About half the finalists receive one-year scholarships worth about \$2,000.

The PSAT-NMSQT was the center of bitter controversy for alleged gender bias in the

design of questions in the late 1980s and early 1990s. Although 55% of the students taking the PSAT-NMSQT were girls, they made up only 40% of those awarded National Merit Scholarships. The test’s sponsors contended that the PSATs and SATs were accurate predictors of how students subsequently performed at college. Evidence gathered by the American Civil Liberties Union and the National Center for Fair and Open Testing, however, showed that average grades of girls were higher than those of boys in both high school and college, despite PSAT and SAT scores that consistently averaged 50 to 60 points below those of boys. The two organizations filed a federal civil rights complaint with the U.S. DEPARTMENT OF EDUCATION charging that the method of awarding National Merit Scholarships discriminates against girls. In 1997, the College Board agreed to augment the PSAT with a writing test. Girls traditionally score better than boys on such tests, and subsequent test results narrowed the gender gap from 4.5 points to 2.7 points.

National School Lunch Program A federal program that makes free or inexpensive lunches available to needy schoolchildren. Based on studies showing that well-nourished children perform better in school, Congress passed the National School Lunch Act in 1946 to guarantee lunch for every American child in school. Although all public schools must provide students with lunch, they do not necessarily have to participate in the National School Lunch Program.

Schools that do participate are required to provide lunches that meet specific federal government nutritional requirements, including a half-pint of milk, two ounces of lean meat, poultry, fish or alternative food, vegetables and fruit, bread, and one teaspoon of butter or margarine. Costs of the program are defrayed to some extent by state aid and fees charged to parents who can afford them, but the vast

majority of the costs of the lunch program are financed by about \$5 billion a year in federal funds. Administered by the Department of Agriculture, the School Lunch Program also avails itself of surplus foods accumulated under government farm-subsidy programs. In 1966, the School Lunch Program was expanded with passage of the CHILD NUTRITION ACT to provide school breakfasts for economically deprived children who might not otherwise obtain enough food at home before they left for school. Twice amended in the 1970s, the Child Nutrition Act also provided funds to encourage milk consumption by children in nonprofit schools, child-care centers, nursery schools, settlement houses, summer camps and similar nonprofit institutions. The school breakfast and milk programs raised Department of Agriculture costs for school nutrition programs about \$10 billion a year.

National Science Foundation A federal government agency created in 1950 to support science education and research in the United States. Still the leading government supporter of science, NSF underwrites research in all the natural and social sciences, as well as engineering and mathematics. In education, NSF underwrites efforts to improve science teaching, to identify and provide scholarships, fellowships and research grants for the scientifically gifted and to encourage increased entry into the sciences by women, minorities and the handicapped.

National Security Education Program A federally financed program established in December 1991 to encourage study of largely overlooked languages and countries (usually in developing nations) of strategic importance to the United States and to attract skilled operatives to agencies involved in national security affairs. Jointly sponsored and supervised by the U.S. DEPARTMENT OF DEFENSE and the Central Intelligence Agency, the program has sent sev-

eral thousand American undergraduate and graduate students to more than 100 countries to study, conduct research and learn languages ranging from Arabic, Chinese, Hindi and Russian to Farsi, Kmer, Twi and Zulu. Available at about 200 U.S. colleges, the program awards scholarships of up to \$16,000 a year to juniors and seniors to study other languages abroad and to freshmen and sophomores to foster interest in international affairs. The competition is administered by the Institute of International Education. In a competition administered by the Academy for Educational Development, the program also awards fellowships of up to \$10,000 per semester to graduate students to develop expert skills in the languages and cultures of less commonly studied countries. The program also awards grants averaging \$250,000 to help colleges in the United States develop or strengthen programs in critical languages, regions and international programs. Award recipients must apply for work with a federal agency involved in national security affairs—in either the United States Departments of Commerce, Defense, Energy, Justice, State or Treasury or the Central Intelligence Agency. If no employment is available in such agencies, they may, as an alternative, work in higher education. Study in Western Europe, Australia, Canada and New Zealand is not eligible for NSEP support. In developing countries where French or Spanish is the primary language, applicants must qualify for advanced language study.

National Security Language Initiative A U.S. State Department program to pump more than \$100 million into college foreign-language departments to fund the teaching of Arabic, Farsi, Chinese and other languages of nations and geopolitical areas of the world deemed critical to American foreign policy interests. Launched in 2006, the program provides training for more than 250 students in

so-called critical languages and brings about 300 native speakers of such languages to the United States each year to teach in school and college foreign-language programs.

(See also STATE SCHOLARS INITIATIVE.)

National Society for the Study of Education One of America's most important sponsors of scientific research and discussion of significant educational issues. The publisher of some of the most authoritative volumes in education, the society is a successor organization of the National Herbart Society for the Scientific Study of Teaching, which adopted its current name in 1902. Although the educational philosophy known as HERBARTIANISM had been discredited by then, the Herbart Society was credited with having converted the theoretical study of education from a philosophical field into a scientific field.

National Teacher Examinations Standardized professional-qualification examinations for teachers completing undergraduate or graduate teacher education programs or training in specialized teaching. The tests were developed by the National Teacher Examinations Policy Council and National Board for Professional Teaching Standards, made up of representatives from state departments of education, teachers colleges and school districts. The tests are designed to be the basis of a national teacher certification program that will permit National Board teachers eventually to teach in any state without having to go through the often cumbersome recertification procedures now required when they move from state to state. The tests are made up of two batteries of tests—one measures communication skills, general knowledge and professional knowledge; the other, specific knowledge in any of more than two dozen specialty areas such as early childhood education, educational administration/supervision, special education and

specific academic subjects such as mathematics or French.

National Teacher Examinations have been the subject of professional and legal controversy for several decades. On the one hand, the courts have supported the constitutional right of states to use NTEs for teacher certification and the right of districts to use NTEs for selection of new teachers. But courts have consistently enjoined school districts from using NTEs as a basis for making decisions about retaining veteran teachers or for evaluating teaching performance, saying that such uses violate teacher rights to due process under the Fourteenth Amendment. In essence, the courts have held that the schools did not have the right to contract teachers under one set of standards and then to apply a second, newer set to break the earlier contract. Nevertheless, most states have moved closer toward adherence to NTE standards, either requiring teachers to pass state licensing tests that all but duplicate the national tests or by encouraging teachers to earn national board certification. Indeed, by 2000, 31 states offered teachers financial incentives to take and pass the NTEs, and a dozen other states were moving to do so.

The thrust toward NTE certification began in the 1980s, after education reformers exposed low teacher certification standards as one source of poor public school educational quality. Most state certification examinations set low passing grades, allowing those who leave even half the questions blank to pass. Indeed, standards were often so low that few states ever accepted teachers with only out-of-state certification. The Education Trust, a nonprofit Washington, D.C., organization that studies teacher preparation, found that most state certification tests for elementary school teachers required only ninth- or tenth-grade knowledge to pass, while high school teachers required only about an eleventh- or twelfth-grade education to pass. Moreover, the U.S. Department of Education

found that one-third of all public school teachers lacked a major or minor in the subjects they taught. By the end of the century, however, 39 states had either implemented or were considering implementing tough new teacher certification standards.

national testing A controversial scheme to require all students in the United States to take a battery of standardized tests to measure levels of educational achievement. Proposed in 1991 by President George H. W. Bush's Education Policy Advisory Committee, made up of educators and business leaders, the scheme ran into opposition from various state educational leaders who feared that low test scores would reflect poorly on their state educational systems. Other critics expressed fear that national testing could lead to a standardized national curriculum if school administrators and teachers begin gearing their educational programs to produce high test results. The CONSTITUTION OF THE UNITED STATES omits all mention of education, thus leaving control over public education to state and local authorities. On this basis, critics maintain the policy represents an "arrogant" federal abrogation of state rights to control public education.

Proponents argued that current locally controlled report cards and tests produce grade inflation that gives parents an overly optimistic picture of their children's academic progress. Students thus have little motivation to improve their school performance—and parents have no motivation to insist that their children do so—until some form of reliable national testing yields results showing how each student ranks on a national scale. National tests, say proponents, have traditionally driven German, Japanese and other national educational systems, whose students consistently outperform American students. Since 1970, however, the NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS (NAEP) has been testing sample populations of about

250,000 fourth, eighth and twelfth graders in five test subjects—history/geography, mathematics, reading, science and writing—and ranking scores as "basic," "intermediate" and "adept" or "proficient."

In the late 1980s, such testing in a limited number of states indicated that American public school students had fallen far behind their counterparts in other industrialized nations, and the findings provoked a cry from educators and parents for education reform. In 2001, Congress responded with far-reaching federal controls on American public school education. Signed into law by President George W. Bush in 2002, the NO CHILD LEFT BEHIND ACT OF 2001 (NCLB) amended the ELEMENTARY AND SECONDARY EDUCATION ACT OF 1965 (ESEA) by imposing testing requirements on all states and public school districts and requiring every school to demonstrate year-to-year improvements in academic performance or face loss of federal subsidies. Aimed especially at schools with disadvantaged children, NCLB allows parents in failing public schools to transfer their children to other schools, and it allows states to replace the curricula and staffs of schools that make no academic progress for four consecutive years.

NCLB proved to be at the same time the most welcome and the most controversial element of ESEA. With student academic proficiency ranging from well above national norms in northeastern states such as Massachusetts and Connecticut to abysmally low levels in states such as Hawaii, Louisiana and New Mexico, educators across the nation had long called for establishing minimum national academic standards. Constitutionalists, however, cite the Tenth Amendment to the Constitution, which leaves to the states all powers not expressly conveyed to the federal government by the first nine amendments. The word *education* does not appear in any of those amendments and has therefore always fallen under state purview.

By accepting federal grants to education, however, school districts tacitly accept the conditions that come attached to any loan or grant in aid.

national university An institution proposed at the founding of the United States as a means of discouraging sectionalism of the type that almost prevented ratification of the Constitution. GEORGE WASHINGTON was among those favoring establishment of such an institution and even contemplated endowing it. THOMAS JEFFERSON urged establishment of such a university as part of a federal education system, with a primary school in each parish, a secondary school for each county, a college for each state and a national university. Competitive examinations would determine whether a student progressed from one level to the next, and graduation from the national university, where students would learn political science, government administration and international diplomacy, would be mandatory for all those seeking public office at the national level. JAMES MADISON and Charles Pinckney spent long, hard months trying to persuade the Constitutional Convention to empower Congress “to establish a university, in which no preferences or distinctions should be allowed on account of religion.” Although it had the support of a significant minority of delegates, including Jefferson, BENJAMIN FRANKLIN, BENJAMIN RUSH and John Adams, the concept of a national university was defeated by those opposing any federal role in education. Opponents of such a role feared the central government might eventually mandate compulsory education and thus deprive northern cotton mills and southern plantations of inexpensive child and slave labor.

Although the question of a federal role in education was debated in successive sessions of Congress, from the 1790s through the War of 1812, support gradually eroded in the face of growing sectionalism.

George Washington, who died in 1799, left a bequest in his will to establish the national university in the new federal capital, then nearing completion in the city that would bear his name. In 1807, President Thomas Jefferson, who would later found the University of Virginia, planned to convert the bequest into reality by appointing an aide to work on a *Prospectus of a National Institution, to Be Established in the United States*. The *Prospectus* envisioned bringing together the nation’s foremost scholars and scientists to teach all branches of the arts and sciences and to conduct research in all areas of science and engineering. In addition, graduate schools at the new institution would train students for careers in government, law and medicine, and the university would be the site of the first modern university press to publish scientific and scholarly reports and supply inexpensive textbooks.

Unfortunately, deteriorating foreign relations forced Jefferson to turn his attention to military and economic affairs, and he abandoned the project. His successor, James Madison, again pressed the issue, asking for constitutional authority to “institute . . . seminaries of learning” and a national university, but the War of 1812 forced him to abandon the project. The plan for a national university did not die, however. In 1821, a group of private benefactors founded the Columbian Institution for the Promotion of Arts and Sciences and Columbian College. In 1832, Congress used Washington’s bequest to grant the college \$25,000, and it ultimately became George Washington University—not the national university its namesake had envisioned, but nonetheless an institution of national renown that is still supported by federal government grants.

National Writing Project A model, university-based teacher development program to improve the teaching and learning of writing in American elementary and secondary schools

by teaching teachers how to write. Conceived in 1973 at the University of California–Berkeley’s School of Education, the program was a response to studies showing that American students were graduating high school and entering college without the skills to cope with the writing demands of higher education. Subsequent research traced the cause to the fact that the vast majority of American classroom teachers, elementary through university, had never been trained to write and, as a result, demanded little writing of any length or substance from their students. Though often well trained in pedagogy, their lack of writing skills translated into an inability to teach their students how to write. Essentially, teachers learn to teach elementary and middle school students a five-step “process method” of writing, consisting of brainstorming, first draft, conferences with peers or teacher, editing and final draft. In addition, teachers give students more freedom to choose their own topics and to write from experience. The process is, in other words, student-directed instead of teacher-directed; as a result, teachers find students are more enthusiastic and emerge with improved writing skills.

Held at universities across the United States, the National Writing Project sponsors five-week Summer Institutes each year, in which teachers of writing train other teachers to write and to teach writing to their students when they return to their local schools. In addition, teacher-graduates of Summer Institutes are expected to share their training with other teachers in their schools. The Summer Institutes train teachers in all writing forms—essay, autobiography, biography, poetry, fiction, and so on. Summer Institute instructors include professional writers, scholars in the field of writing and former Summer Institute fellows.

Originally called the Bay Area Writing Project, NWP at University of California–Berkeley is actually a model project. In addition to training school teachers to write, NWP

also trains representatives from other schools of education at other universities to conduct Summer Institutes and train teachers in their region using the Berkeley model. In addition to student tuition, NWP Summer Institutes receive annual funding from the federal government. NWP is one of two major projects of its kind, the other being the Bread Loaf School of English at Middlebury College, Middlebury, Vermont.

National Youth Administration A federal government program established in 1935 by executive order of President Franklin D. Roosevelt to provide funds for part-time employment of needy students, aged 16 to 24, with the intent of helping them remain in school. The program also provided funds to needy young people of those ages who were out of school but willing to work on community projects. Although NYA disappeared with World War II and the end of the Great Depression, it provided an operational blueprint for the NATIONAL YOUTH CORPS.

National Youth Corps (NYC) A federal government program created in 1965 to reduce high school drop-out rates by providing funds for part-time work during the school year and summer jobs for low-income students in grades 9–12. Jobs were usually offered by nonprofit institutions and government agencies in or near each student’s neighborhood so that the student could live at home. Also called the Neighborhood Youth Corps and patterned on the National Youth Administration of the 1930s, NYC also offered jobs to economically disadvantaged out-of-school youths aged 14 to 19 to teach them employable skills. Established as part of the ECONOMIC OPPORTUNITY ACT, or “WAR ON POVERTY,” the National Youth Corps employed 1.5 million young men and women in the five years from 1967 to 1972, when it came under attack by critics who claimed it

had failed to produce significant results. Its work was nevertheless continued under new direction as part of the COMPREHENSIVE EMPLOYMENT AND TRAINING ACT OF 1973.

A Nation at Risk: The Imperative for Educational Reform A 65-page report on the quality of American public education prepared in 1983 by the NATIONAL COMMISSION ON EXCELLENCE IN EDUCATION. The report stunned the American educational community and the general public by comparing American education to foreign education and stating that poor-quality education had put U.S. economic survival, international trade and national security "at risk." The report warned of "a rising tide of mediocrity that threatens our very future as a nation and as a people. If an unfriendly power had attempted to impose on America the mediocre educational performance that exists today, we might well have viewed it as an act of war."

The report sparked a massive educational reform movement that continued for the rest of the 1980s and 1990s and attempted to implement many of the report's recommendations, including improved curriculum content, more demanding academic standards and high school graduation requirements, improved teacher training and a longer school year. *A Nation at Risk* proposed national educational standards that would require every American to successfully complete four years of English, three years each of mathematics, science, social studies and a foreign language, and one half-year of computer science as a prerequisite for high school graduation. It recommended that the school year be extended from an average of 178 days to between 200 and 220 days. Many of the commission's proposals were eventually incorporated into the federal government's GOALS 2000 plan to make "American students first in the world in mathematics and science achievement" by the year 2000 and to assure

that all American students graduate from grades 4, 8 and 12 able to demonstrate "competency in challenging subject matter."

"A Nation Prepared: Teachers for the 21st Century" A report issued in 1986 by the Task Force on Teaching of the Carnegie Forum on Education and the Economy. One of many reports from various sources on education reform in the 1980s, "A Nation Prepared" hoped to influence leaders in American public education to improve teaching standards by adopting these reforms:

1. Establish a national credentialing board to ensure high standards for teachers.
2. Restructure schools to hold teachers accountable for student progress, but grant teachers more decision-making powers to achieve state and local goals.
3. Restructure teaching to include lead teachers as mentors.
4. Require an undergraduate degree in the arts and sciences as a prerequisite for entering teacher-education programs.
5. Develop a Master in Teaching degree requiring internship and residency in schools.
6. Attract minority students into teaching.
7. Tie teacher incentives to student performance and provide more support services.
8. Make teacher salaries and professional opportunities competitive with those of other professions.

By 2000, the proposed reforms, like most others that had emerged a decade earlier, were still the subject of heated debate in American education. The National Teacher Examinations Policy Council and National Board for Professional Teaching Standards had developed a set of NATIONAL TEACHER EXAMINATIONS as a basis for a national teacher certification program to permit teachers eventually to teach in any state without the need for recertification, as had previously been required when moving from one state to another.

The Nation's Report Card A popular name for the NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS, which tests a sample school-aged population each year to measure achievement in a range of academic areas. It is also the name of a 1987 report recommending changes in the methods of selecting NAEP's sample population. Prepared by Lamar Alexander, then-governor of Tennessee and future U.S. secretary of education, and educator H. Thomas James, *The Nation's Report Card* suggested that NAEP assess students in the transitional third, fourth, eighth and twelfth grades instead of third, seventh and eleventh graders.

natural history The study of the development and growth of all natural organisms. Natural history was a required element of the academic curriculum in American secondary schools and colleges from the beginning of the colonial era to the 19th century, when scientific knowledge expanded so rapidly as to require division of the natural history curriculum into constituent elements such as biology and zoology.

natural philosophy One of the three Aristotelian divisions of philosophy, which 17th- and 18th-century educators in England and the American colonies used as a convenient approach to teaching philosophy in secondary schools and colleges. The other divisions were mental philosophy, which dealt with logic and mathematics, and moral philosophy, which covered the ethical and theological rules for a happy life.

Natural philosophy was a catchall title for study of what little was then known about botany and physics and, later, chemistry and biology. With the rapid advance of scientific knowledge in the 19th century, the scope of natural philosophy became so great as to necessitate its division into its constituent parts—biology, chemistry and physics—and the term disappeared from the curriculum.

Naval Reserve Officers Training Corps (NROTC) A training program in which young men and women may earn commissions in the U.S. Navy or U.S. Marines while attending college on U.S. government scholarships. The NROTC scholarship program subjects applicants to an extremely rigorous academic and physical selection process. Those who pass receive the rank of midshipmen, with full tuition, books, fees, uniforms, costs of naval science courses and assorted financial benefits for either two or four years of college, along with a stipend of \$350 a month in the junior year of college and \$400 in the senior year. Midshipmen must also spend one summer training at sea for future Navy officers or at Quantico, Virginia, for future Marines. Upon graduation from college, midshipmen are promoted to the rank of ensign in the Naval Reserve or second lieutenant in the Marine Corps Reserves and must serve eight years commissioned service, at least three of which must be active duty. Only about 70 American universities host NROTC programs, but participants may attend a college other than the one where they obtain their NROTC training. Many colleges severed their relations with the NROTC and other campus-based military training programs because of their objections to Pentagon policies regarding homosexuals in the military.

(See also COLLEGE DIRECTORIES.)

Naval War College One of several schools of graduate education established for the military in the decades following the Civil War. Like its counterpart, the ARMY WAR COLLEGE, the Naval War College has two purposes: to train professors of naval science and tactics to teach at the U.S. Naval Academy and to provide advanced naval education for prospective commanders, captains and admirals.

Nebraska The 37th state to join the Union, in 1867. In 1855, the territorial legislature

enacted a law establishing free elementary schools and school boards to run them, while the state constitution of 1875 added secondary schools to the public education system. The state has more than 1,300 elementary and secondary schools with about 280,000 students. Eighth graders rank 14th and 12th in the nation in reading and math proficiency, respectively. About 18% of students are minority children, and 12.5% live in poverty. The state has about 115,000 students in its 39 institutions of higher education, which include seven public and 16 private four-year institutions and eight public and eight private two-year institution. Enrollment at four-year schools is about 75,000, and the graduation rate is about 50%. Among the most notable are the University of Nebraska, with a main campus at Lincoln and satellite campuses in Omaha and Kearney, and Creighton University, a Catholic institution in Omaha, founded in 1878 by the Jesuits.

need-blind admissions A concept whereby college and university admissions officers are kept unaware of the financial circumstances of student applicants. The concept was first introduced after the U.S. Supreme Court's landmark decision in 1954 in *BROWN V. BOARD OF EDUCATION OF TOPEKA*, which ruled racial segregation in schools unconstitutional. At the time, most private colleges and universities not only had quotas restricting the number of minority applicants they admitted, they also gave preference to applicants whose families could afford to pay the full cost of their children's education. The practice not only conserved college and university funds, it also made it virtually impossible for the vast majority of black and other nonwhite minority students from poor families to gain admission. As racial bias lessened and colleges began *AFFIRMATIVE ACTION* programs to recruit racially and ethnically diversified student bodies, they instituted need-blind admissions procedures to eliminate the

possibility of bias in judging applicant credentials. By the mid-1960s, the 5,600-member National Association of College Admission Counselors officially endorsed admitting candidates "on the basis of academic and personal criteria rather than financial need," and need-blind admissions policies became the rule at almost all colleges and universities in the United States.

The 1980s and 1990s, however, saw costs spiral on college campuses everywhere, and by 1990 many of the nation's richest, most heavily endowed colleges and universities, such as *YALE*, *HARVARD*, *COLUMBIA* and others, were accumulating huge annual deficits. In 1990, *SMITH COLLEGE*, a women's college in Northampton, Massachusetts, became the first of the northeastern private colleges to abandon need-blind admissions. One by one, other schools followed suit, and by the mid-1990s many colleges and universities had either publicly or privately abandoned need-blind admissions in favor of policies that considered ability to pay as a factor in admitting applicants.

needs assessment An educational evaluation to identify any failures in a class, school or school system and develop reforms and new programs to improve them.

needs hierarchy The basis of human behavior, according to *ABRAHAM H. MASLOW*'s classic "Theory of Human Motivation," which listed five sets of goals, or basic human needs, in order of priority. Maslow theorized that humans are seldom motivated to fulfill any given level of needs until the needs of the level below have been met. Thus, he put physiological needs (water, food and so on) as the most basic or bottom level of needs, followed by safety needs, needs for love and affiliation, needs for self-esteem (achievement, adequacy, prestige, education) and need for self-actualization, or fulfillment of one's potential.

Neef, Joseph (Francis) (1770–1854) Alsatian-born teacher of languages and gymnastics at Johann Heinrich Pestalozzi's Burgdorf School in Switzerland and the founder of the first Pestalozzian schools in the United States. After leaving Switzerland he founded a Pestalozzian school in France before coming to Philadelphia in 1805 at the invitation of William Maclure, a wealthy Scot who had amassed a fortune in Europe and then immigrated to the United States to support projects in science, social reform and education. Maclure had deep faith in the Pestalozzian system of elementary school education, which did away with traditional teaching methods based on dogmatism, authoritarianism and memorization. It also eliminated the use of fear and physical brutality to maintain classroom order. Instead, teachers befriended their students and used benevolence and affection to guide them to knowledge, encouraging them to use their senses to observe and work with concrete objects.

After learning English, Neef opened his first American Pestalozzian school in Philadelphia in 1808. It failed in 1814, and he opened a second Pestalozzian school in Louisville, Kentucky. It lasted until 1826, when Neef moved to the experimental Owenite utopian community of NEW HARMONY, Indiana, to become head of community. When the community was abandoned in 1828, Neef moved to Ohio to manage his last school in Steubenville. Although none of his schools survived him, Neef left an indelible mark on the history of American education.

The failure of Neef's many schools was a result of his uncompromising opposition to established religion, which he believed was attempting to tyrannize the minds of young Americans. Like his supporters—and indeed, Pestalozzi himself—he believed that tyrannical methods of instruction had no place in a society in which students would eventually be

asked to govern themselves. The failure of his schools, therefore, did not mean the failure of his methods, which he documented in *Sketch of a Plan and Method of Education, Founded on an Analysis of the Human Faculties and Natural Reason, Suitable for the Offspring of a Free People and for All Rational Beings* (1808). The work is believed to be the first book on modern pedagogy written and published in English in the United States. In 1813, he wrote *Method of Instructing Children Rationally in the Arts of Writing and Reading*. Both books were widely read by educational reformers of his generation, and although his Pestalozzian methods would not become commonplace in the United States for another century, he nevertheless influenced teaching in many American schools of his day.

negligence The injury of another person by an action that “a reasonably prudent person would not have done, or the failure to do that thing which a reasonably prudent person would have done in like or similar circumstances.” Depending on the degree of negligence and the particular state law, negligence can be a misdemeanor or felony. It may also fall in the category of a civil “tort,” or wrongful act for which the individual may be sued by another party. As American society has become more litigious, teachers and school administrators have increasingly become targets of civil suits for alleged negligence. In most courts, however, plaintiffs must prove three things to establish negligence: that the defendant had a duty to protect the injured party against unreasonable risk, that the defendant failed to exercise that duty and that the defendant was the immediate cause of the injury.

neurological impress method One of many multisensory techniques of remedial reading instruction. The technique is a one-to-one approach in which the student and teacher

read the same passage aloud simultaneously in an effort to establish a neurological memory trace as the student sees words in print, while simultaneously hearing his or her own voice as well as the teacher's. Materials are selected based on the student's independent reading level, and the student is directed to read as fluently as possible, ignoring all errors. The technique begins with the instructor reading each new passage slightly louder than the student. As they repeat each passage and the student gains confidence, the instructor gradually lowers his voice to permit the student's voice to become dominant.

Nevada The 36th state to join the Union, in 1864, and until the 1960s, the nation's most sparsely settled state. The territory of Nevada provided for a school system in 1861, and the state constitution established a centralized public system in 1864. Between 1990 and 2000, Nevada experienced a phenomenal 62% population increase, spurred largely by the growth of its mammoth gambling industry. During that decade, the number of public elementary and secondary schools increased from 330 to more than 450. By 2005, the number was approaching 520, while the public school student population had almost doubled from just under 190,000 to about 370,000. To accommodate and encourage such growth, the legislature pumped hundreds of thousands of dollars into construction of new public schools, but the new classrooms produced few measurable effects on the quality of the state's education. Indeed, student academic proficiency slipped badly from about average in the nation in 1990 to well below average by 2000. By 2005, school systems had yet to cope with the burgeoning student population, which ranked among the worst five states in the nation in reading and mathematics proficiency. About 45.5% are minority children, and 9% live in poverty. The state has 17 institutions of higher

education—four public and six private four-year institutions and two public and four private two-year colleges. The drop-out rate at four-year schools is about 50%.

Newbery Medal An award presented annually by the American Library Association for the most distinguished contribution by an American author to American literature for children, published in the United States during the preceding year. First awarded in 1922 to Hendrik Willem van Loon for his book *The Story of Mankind*, the medal is named for John Newbery, an 18th-century English newspaper publisher and one of the first publishers of books written especially for children. Newbery Medal winners automatically gain wide acceptance on elementary school reading lists.

The New England Primer The most widely used 17th- and 18th-century text for learning to read. First published in the American colonies in Boston in 1690 (earlier editions might have been printed in London in the 1680s), *The New England Primer* was designed as a classroom text but quickly evolved into one of the many so-called self-instructors that young men in the colonies used to improve their station in life through self-education. *The New England Primer* became the most popular book of its kind because it was the most complete book of its kind ever published. It combined the alphabet and syllabarium (a listing of syllables) of the traditional HORNBOOK with the materials in the traditional primer—namely, the Lord's Prayer, the Apostle's Creed, the Decalogue and an authorized catechism.

Like all primers, *The New England Primer* used morality and religion as teaching tools. Vocabulary builders included such words as "godliness," "holiness," "benevolence" and "fidelity." Couplets included "In Adam's Fall, We Sinned All" and "Thy Life to Mend, This Book Attend." Prose reading included such

texts as, "Holiness becomes God's house forever" and "I will fear GOD, and honour the KING" and devotions such as "What is the chief End of Man? Man's chief End is to Glorify God, and to Enjoy Him for Ever."

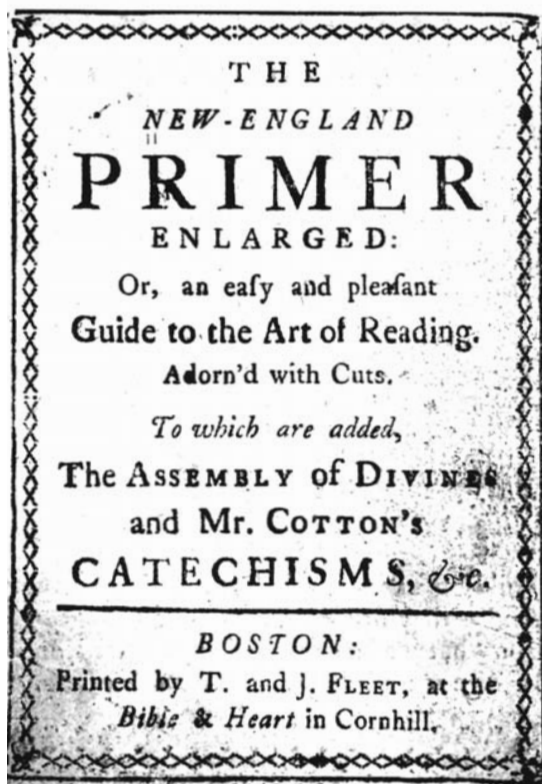
Despite its undisguised effort to proselytize, the reading instruction it offered was recognized by all as essential to opportunity and success in the colonies. Every trade and vocation by then required reading skills to master the manuals and self-instructors that were an integral part of apprenticeships and other vocational instruction. "He who ne'er learns his

ABC, forever will a blockhead be," warned *The New England Primer*. "But he who learns his letters fair, Shall have a coach to take the air."

New Hampshire The ninth of the original 13 states, with a tradition of education that goes back to 1641 and the appointment of Boston schoolmaster Philemon Purmont as pastor of the church in Exeter. Like other pastors, he did double duty as a schoolmaster. Then part of the Massachusetts Bay Colony, New Hampshire opened common schools in all towns with 100 or more families, in accordance with the MASSACHUSETTS LAW OF 1647, but students' families had to pay to attend. Although it became a royal province in 1679, it was governed by the royal governor of Massachusetts from 1699 to 1741, and it was not until 1708 that the province opened its first free, common, or public, school.

In 1769, Eleazar Wheelock, a Congregationalist minister intent on converting Indians to Christianity, moved the school he had founded in Lebanon, Connecticut, in 1754 to larger quarters in Hanover, New Hampshire, where he received a royal charter to convert it into DARTMOUTH COLLEGE. Although he had tutored a few Indian youths in Lebanon, few qualified for admission to Dartmouth, and the college quickly became an institution for white youths.

Despite such auspicious beginnings, New Hampshire public school education lagged behind that of other New England states for most of the 20th century. The state is one of the few in the United States with no income tax—largely because of popular reluctance to invest in state services, including education. In 1997, however, the state supreme court ordered the legislature to develop a comprehensive plan to finance education across the state on an equitable basis. Although the state was slow to develop the new plan, by 2001, the more than 525 public schools not only had a new profes-



Cover from *The New England Primer*, the most widely used 17th- and 18th-century text for learning to read. First published in the American colonies in Boston in 1690, the edition seen here contains a catechism by Cotton Mather. (*Library of Congress*)

sional development scheme in place for new teachers, they had a set of new, higher academic standards that they planned to implement gradually, as incoming students progressed through the school system. By 2005, the education development scheme had produced dramatic results, lifting the reading proficiency of fourth graders to second in the nation and math proficiency to fourth. Eighth graders ranked third in the nation in reading proficiency and seventh in mathematics skills. There are more than 200,000 students enrolled in the state's 525 public schools, of whom 5% are minority children and 7% live in poverty. The state is well known for its private preparatory boarding schools, which rank among the world's finest secondary schools, but whose students are largely from outside the state. The state has about 170 private schools, with a total enrollment of about 24,000 students. Among the most famed of these are the Phillips Exeter Academy, founded in Exeter in 1781, and Saint Paul's School, established in Concord in 1856. The state has five public four-year institutions of higher education and four public two-year colleges. Its 14 private four-year colleges and universities include Dartmouth and Colby-Sawyer. There is one private two-year college.

New Harmony (Indiana) An experimental utopian community created in 1825 by Robert Owen, a wealthy English textile manufacturer and idealistic socialist reformer who believed that universal public education would lead to social perfection. Although the Owenite community in New Harmony disintegrated in social chaos only two years after its founding, the Owenite ideas of education changed American thinking by popularizing the concept of universal public education.

Owen first implemented his ideas of creating a "new moral world" in New Lanark, Scotland, a village of about 2,000 where, with philosopher Jeremy Bentham (1748–1832), he

bought the textile mills and from 1812 to 1816, created a model industrial community. He not only operated his textile mills profitably, he also did so humanely, eliminating child labor, significantly improving worker living and working conditions and introducing free, universal public education. After Parliament rejected his proposal to establish similar communities in England, Owen looked elsewhere for opportunities to found utopian towns. As it happened, a well-established utopian community was for sale in Neu Harmonie, Indiana.

In 1814, German religious leader Frederick Rapp had led his flock from Harmony, Pennsylvania, to the wilderness of the Indiana territory to establish a Kingdom of God on Earth in anticipation of the Second Coming of Christ. In the decade that followed, they developed a thriving community with homes, mills, orchards, formal gardens, an orchestra and choirs. The brewery and flannel and rope factory sold goods to 22 states and 10 countries. Then, in 1825, at the peak of their prosperity, Father Rapp commanded them to return to Pennsylvania, and they sold their 20,000 acres, their village, vineyards and fields to Robert Owen and his new partner, Robert Maclure, for \$130,000.

Maclure was a wealthy Scotsman who had amassed a fortune in European business ventures and then immigrated to the United States to dabble in science, education and social reform. A devotee of Pestalozzian and Fellenbergian educational philosophies, he had persuaded JOSEPH NEEF, Pestalozzi's colleague, and two other Pestalozzian teachers to come to Philadelphia at his expense to establish Pestalozzian schools. After Owen decided to purchase New Harmony, Maclure, Neef, the other teachers and a group of scientists joined Owen and moved westward to establish their utopian community. Hundreds of would-be residents flocked to New Harmony, bringing with them a variety of conflicting expectations. Some expected Owen to give them jobs; others

thought he would simply support them; and still others, who were utopians themselves, thought they would have the opportunity to establish their own independent, experimental living communities at Owen's expense. An attempt at writing a constitution exposed these conflicts and disintegrated into chaos. Eventually, three subcommunities were formed: the Education Society, the Agricultural and Pastoral Society, and the Mechanic and Manufacturing Society.

The arrangement did not solve New Harmony's basic social problems, and the community failed to establish a "new moral world." The Educational Society, led by Maclure, Neef and the other educators, however, became one of the most influential institutions in American education. It combined a library, museum collection and a publisher of books and periodicals for all ages with an infant school, a grammar school, a secondary school, a vocational school and a school for adult education to "communicate a general knowledge of the arts and sciences to those persons who have hitherto been excluded from a scientific or general education by the erroneous and narrow-minded policy of colleges and public schools." In addition, there was an Orphans' Manual Training School, where a few abandoned children were taught "all useful knowledge as well as . . . the useful arts."

The New Harmony schools not only mixed students of all economic and social classes, they were also the first American schools to offer young women equal academic and vocational educational opportunities. The infant, grammar and secondary schools were Pestalozzian boarding institutions that admitted children as soon as they could walk. They were designed to keep them for 10 years—to prevent the transmission in the household of "age-old vices that have afflicted mankind for generations." (Obviously, New Harmony closed down before the design was fulfilled.)

The vocational school offered training in taxidermy, carpentry, blacksmithing, cabinet-making, shoemaking, agriculture, cooking, sewing, housekeeping, millinery, printing, binding and engraving. Together with the publishing venture, the vocational school's printing, binding and engraving unit produced such notable books as *Maclure's Opinions on Various Subjects, Dedicated to the Industrious Producers*, scientist Thomas Say's *American Conchology* and the widely circulated periodical *Disseminator of Useful Knowledge*. New Harmony's educators developed new pedagogical techniques, and its scientists produced landmark research in geology and other natural sciences. Indeed, for a brief moment, New Harmony was one of the great centers of scientific research and publication in the United States.

On May 27, 1827, Owen left New Harmony to return to Europe. In his farewell address to the "social colonies of equality and common property on the New-Harmony estate," he made a pretense at optimism. "When I return," he said, "I hope to find you prosperous, and in Harmony together." In fact, dissonance had already swept through the community, and it disintegrated. Although some Owenites remained in New Harmony, its educators and other leaders moved elsewhere, contributing to the development of schools, libraries and universities throughout Indiana and the West. Everywhere, they pioneered new methods for educating children and for property rights and other equal rights for women. They launched a national debate on universal public education that eventually inspired education reformers such as HORACE MANN and HENRY BARNARD to found the first state public school systems in the United States and open education to women. Owen's son Robert Dale, who had accompanied his father to New Harmony to teach school and edit the local newspaper, remained in the United States, moving to New York in 1829 to become a newspaper editor and, from 1843 to 1847, a member

of the U.S. House of Representatives, where he was an outspoken advocate of emancipation.

New Jersey Third of the original states of the Union and one of the first to establish a state-supported public school system, in 1813. The system was not, however, “public” in the modern sense, because it charged fees that restricted its universality. It was not until 1871 that the state abolished all fees for instruction. The state now has more than 2,300 public elementary and secondary schools, with an enrollment of 1.3 million students. The state’s more than 900 private schools—many of them world renowned—have an additional enrollment of about 210,000 students—many of them from out of state. Among the state’s most famous private schools are the Lawrenceville School in Lawrenceville, and the Peddie School in Hightstown.

The educational quality of New Jersey public schools ranks well above average for the United States. However, a wide disparity exists between educational spending and the quality of education in wealthy and poor communities. The state’s wealthy suburban school districts with high property values yield a strong and steady flow of property taxes for schools, while property taxes in poor urban, mostly minority districts are too low to provide high-quality education. Indeed, the 30 poorest districts filed a suit against the state that led to a 1990 ruling by the state supreme court ordering state authorities to raise educational quality of the poorest districts to that of the wealthier districts.

The state responded with a special \$1.1 billion appropriation for public school financing to offset differentials in property tax flows. The appropriation raised spending in every school district in the state to \$6,640 per student and provided each district with special needs an additional 5% spending per student, or about \$330 per year. When educational quality in the poorest districts failed to climb, a second suit was filed, and the court agreed that the 5%

additional spending was not adequate to close the educational gap between rich and poor districts. It then ordered the state to increase the compensatory spending in poor districts to 24% per student, or nearly \$1,600 a year. Although a state court decision, it set a precedent for courts in about three dozen other states whose school systems were facing similar problems. Although spending gaps continue to exist between rich and poor districts, the state’s 1.4 million school children rank seventh in the nation in academic proficiency. Fourth grade scores in reading and math proficiency in 2005 were 13th and fifth in the nation, respectively, while eighth grade scores in the same disciplines ranked fifth and 13th in the nation. The state has more than 2,400 public schools; more than 40% of students are minority children and about 9% live in poverty.

New Jersey has 52 institutions of higher education, including 14 four-year and 19 two-year public institutions and 21 four-year and four two-year private institutions. The state’s first institution of higher education was the College of New Jersey (now PRINCETON UNIVERSITY), founded in 1746. Rutgers, the State University of New Jersey, was founded by dissident New Light pastors of the Dutch Reformed Church in 1766. First called QUEENS COLLEGE, it was founded in New Brunswick as a rival to New York City’s King’s College (now COLUMBIA UNIVERSITY), then controlled by Anglican and Old Light Dutch Reformed ministers. Queen’s College took its present name in 1825 in honor of the American colonial patriot and philanthropist Henry Rutgers (1745–1830), who contributed generously to the school. It became the state university in 1945 and now has 12 undergraduate colleges and 10 graduate schools. The graduation rate at four-year colleges is more than 60%.

New Jersey v. T.L.O. A 1985 U.S. Supreme Court decision that ruled it legally permissible

for public school officials and teachers to search a student's property as long as the scope of the search was proper and there were "reasonable grounds" to believe the search would yield evidence of a violation of the law or school rules. Although the Court said that students were covered by Fourth Amendment protection against "unreasonable searches and seizures," it said that school officials could conduct certain types of searches without a warrant as long as they fulfilled two important prerequisites: (1) based it on the grounds of reasonable suspicion and (2) limited the scope of the search to one that was appropriate for the circumstances. "T.L.O." were the initials of a girl (her name was kept confidential) who was caught smoking in the school bathroom. School officials searched her pocketbook and found drug paraphernalia and evidence of recent drug sales. They called police, and she was arrested. She challenged her eventual conviction on the grounds that the evidence against her had been seized illegally, but the Court ruled against her. Noting that violent crime and drug use in schools had become "major social problems," the Court declared that "the school setting requires some easing of the restrictions to which searches by public authorities are ordinarily subject." The Court failed, however, to provide specific, in-school search-and-seizure rules and left most educators unclear about the extent of their rights in this area. "The legality of a search of a student," said the Court, "should depend simply on the reasonableness, under all the circumstances of the search."

New Light–Old Light controversy A bitter ecclesiastical dispute among Protestant clergymen in the 18th-century American colonies that led eventually to the creation of large numbers of new educational institutions. The controversy centered around the question of salvation. Old Light clerics insisted that salvation lay in study, education and good works,

while the upstart New Lights claimed it depended on a fearful, emotional discovery of the terrors of hell and God's powers. New Light salvation lay in a soul-shattering "conversion" and dedication of one's soul to the service of God.

The controversy erupted in the 1720s and 1730s with the arrival in the colonies of Dutch, Irish and German preachers, whose Protestantism had sprung from an evangelism based on the premise of man born burdened with original sin that required an unburdening and a conversion produced by rediscovery of God. Old Light Congregationalists and Presbyterians, who had dominated religious life in the colonies for the previous century, had a different perspective. Although they had originally arrived in the colonies in full religious rebellion against the Anglican concept of predestination, after a century of life in the colonies they had established their own, new class system. Although more egalitarian than the traditional English system based on noble birth, it nevertheless quickly distinguished between the successful and unsuccessful, wealthy and poor, the landed and unlanded, the high-born and low, the educated and illiterate. The church, in turn, distinguished between those who supported it financially and those who did not, and the former clearly had a far greater chance of salvation than the latter.

When the evangelistic New Light preachers arrived in the colonies offering salvation to those with no hope for salvation in established Old Light churches, public charges of heresy were heard throughout the land. The net result, however, was an explosion in the number of New Light churches in the colonies, with only a slight decline in membership in Old Light churches—primarily because the colonial population was growing fast enough to accommodate the increase in the total number of churches. Because every church served as the basis of secular as well as religious education of

parishioners' children, thousands of children whose parents could not afford fees in Old Light church schools could now learn to read, write and calculate, as well as discover God and salvation in free, New Light churches. Though no less fanatic in their religious beliefs than Old Light ministers, the New Light preachers' concept of egalitarianism captured the minds of a majority of colonials, discrediting the concept of predestination and laying the psycho-sociological groundwork for the revolution that followed against the English king, the English church and England's other institutions.

In addition to new grammar schools, New Light Protestants also founded academies and colleges to train New Light ministers to lead the war against Satan. Indeed, at least four dozen new academies and five colleges (four of them still standing) emerged from the New Light–Old Light controversies between 1727 and 1783. The first and only college not to survive was LOG COLLEGE, founded in Pennsylvania by the Presbyterian New Light preacher William Tennant. Subsequently, New Light Presbyterians founded the College of New Jersey (now PRINCETON UNIVERSITY) in 1746, while New Light Baptists founded the College of Rhode Island (now BROWN UNIVERSITY) in 1756. In 1769, the New Light Congregationalist minister Eleazar Wheelock founded DARTMOUTH COLLEGE, while a New Light faction of the Dutch Reformed Church founded Queen's College (now Rutgers) in 1766, to counter King's College (now COLUMBIA UNIVERSITY), which Old Light Dutch Reformed pastors and Anglicans had established in New York City a decade earlier.

new mathematics (“new math”) A primary and secondary school mathematics program introduced in the late 1950s and early 1960s to expand student understanding by teaching the concepts of the origin and structure of mathematics rather than limiting the emphasis to computation based on memoriza-

tion. Also called modern mathematics, new math caused enormous controversies in education by introducing abstract concepts in logic to students often too young to grasp them. At the same time, many elementary school teachers, believing “new math” provided all the mathematics knowledge students would need, failed to teach and drill students in basic operations in addition, subtraction, multiplication and division. Indeed, the rule in many “new math” classes was to “throw away the multiplication tables.” Millions of American students did just that and emerged innumerate, unable to calculate from memory.

New math consists of logic, set theory, number systems, axiomatics, probability and Boolean algebra—none of which was “new” when new math was introduced into the curriculum. In simplest terms, set theory, for example, is rooted to a preliterate, premathematical era, when people had not yet invented numbers and, therefore, could not count. It is presumed that people could, however, distinguish the differences between “sets” of objects—more than, less than or same as. The classic case posits a shepherd in a cave with a “set” of goats he releases to graze each morning. As each goat leaves, the shepherd moves a pebble from one side of the cave's entrance to the other, until his set of pebbles is the same as his set of goats. If the entire set of goats does not return at dusk, a subset of pebbles is created equal to the subset of missing goats.

In concentrating on the teaching of such abstract mathematical concepts as sets and subsets, equal and equivalent, numbers and numerals, many teachers often failed to give their students the practical arithmetic tools essential for daily life such as counting correctly and knowing from memory the change owed when paying for a 67-cent item with a one dollar bill. Insisting that such practical aspects of mathematics would develop as a logical outgrowth of new math, zealots had

imposed new math as the standard in elementary schools across the United States by the late 1960s. When the mathematics proficiency of American students showed a dramatic decline in the 1970s, parents as well as educational reformers demanded a return to traditional instruction. The result was a compromise curriculum in which students were taught to memorize the multiplication tables and other tools of arithmetic at the same time as they were introduced to some new math to improve their understanding of the broader concepts on which mathematics is based.

New Mexico The 47th state to join the Union, in 1912. Colonized by Spanish soldiers in 1598, New Mexico offered little formal education until after 1700, when the Jesuits (and the Franciscans, after the Jesuit expulsion in 1767) established missions to teach the gospel to passing nomadic Indian groups as well as to the handful of children of colonial families. The missionaries also taught the nomads crafts, agriculture and even mining and eventually lured them into creating and living in pueblos complete with farms, workshops and mines. In 1721, a royal decree ordered the establishment of a public school system, but constant raids by Navajo, Apache, Comanche and other nomadic Indians destabilized most of the settled communities. It was not until the 1850s, 30 years after Spain had ceded the territory to Mexico and a decade after the United States seized it from Mexico, that the first permanent schools were built in New Mexico. The state established a public school system in 1891 that remains just about the nation's worst—49th behind Mississippi—with 765 elementary and secondary schools for a population of 325,000 students—more than 65% of them minority students and an astonishing 24% living in poverty. More than 50% of students are Mexican or of Mexican origin, and more than 11% are American Indian. Student academic proficiency

of fourth graders ranks 50th in the nation, tied with Mississippi, in both reading and mathematics, while eighth graders share the bottom spot with California, Hawaii, Mississippi and Alabama.

The state has seven public and 13 private four-year institutions of higher education and 20 public and two private two-year colleges. The graduation rate at four-year colleges is an abysmal 41%. The state has three AMERICAN INDIAN TRIBAL COLLEGES: Crownpoint Institute of Technology, a private two-year college; Institute of American Indian Arts, a public four-year institution; and Southwestern Indian Polytechnic Institute, a public two-year college.

New Netherland The prosperous Dutch colony founded in North America in 1624 in the southeastern corner of present-day New York State and surrendered peacefully to the British 40 years later. The colony had been founded (and named) when the Dutch West India Company ship *New Netherland* deposited groups of mostly Walloon (French-speaking Belgian) colonists at various points along the river that the navigator Henry Hudson had explored and claimed for the Netherlands in 1609. The West India Company sent additional colonists to New Netherland in 1625, and a year later, Peter Minuit, the first director general of the province, established a central trading post at New Amsterdam, now New York City, where about 200 men, women and children settled.

In 1628, the population of New Amsterdam had grown to numbers that warranted the sending of the first full-time minister—Domine Jonas J. Michaelius. Although he may have started formal instruction of the community's children, Adam Roelantsen was the first officially appointed teacher in New Amsterdam, in 1638, and he is believed to have founded the first elementary school in the area, a school to which the present-day COLLEGIATE SCHOOL in

New York City traces its roots. By 1664, schools had been founded in 11 of the 12 Dutch communities, stretching up to Fort Orange, site of present-day Albany. The teachers were all licensed by the Classis of Amsterdam, the governing body of the DUTCH REFORMED CHURCH, although the Dutch West India Company was responsible for providing the schools and paying teacher salaries.

When in 1649 the company's chief representative, Peter Stuyvesant, sought to make colonists pay for building their own new schools, the colonists filed their famous Grand Remonstrance against him with the States-General, the legislature of the Netherlands. In it, they complained that the "bowl has been going round for the purpose of erecting a common school and it has been built with words, but as yet the first stone is not laid." Among their demands of Stuyvesant and the West India Company: "There should be a public school, provided with at least two good masters, so that first of all in so wild a country, where there are many loose people, the youth will be well taught and brought up, not only in reading and writing, but also in the knowledge and fear of the lord." Their complaints produced no results in terms of new schools, and they had to await the seizure of New Netherland by the British in 1664 before they would see any more schools built in the area.

New School for Social Research (now New School University) A unique New York City institution of higher education founded by a group of American scholars in 1919 to provide education free of the censorship and other political constraints that had hampered education on traditional university campuses during World War I. Among the scholars who founded the New School were historian Charles Beard (1874–1948), philosopher-educator JOHN DEWEY, economist Wesley Clair Mitchell (1874–1948), historian-educator

James Harvey Robinson and economist Thorstein Veblen (1857–1929). All but Veblen taught at COLUMBIA UNIVERSITY at the time.

Located in the neighborhood of Greenwich Village, the New School was founded as an adult-education center with seminar-style teaching by leading scholars who dispensed with traditional college grades and credits and concentrated on imparting knowledge. Today, New School University has seven divisions: the Adult Division; Eugene Lang College, an undergraduate college with 400 to 500 students; the Graduate Faculty of Political and Social Science; the Mannes College of Music; the Robert J. Milano Graduate School of Management and Urban Professions; the Parsons School of Design, founded in 1896 and absorbed by the New School in 1970; and the School of Dramatic Arts/Actors Studio. The Graduate Faculty of Political and Social Science was founded as the University in Exile in 1934 to provide teaching and research opportunities for European scholars whose work and lives were threatened by fascism in Nazi Germany and other countries. Of the more than 30,000 students who enroll in the New School in an average semester, fewer than 25% take courses for credit. Most are working men and women who have completed their formal college and professional education and study.

newspapers Daily and weekly chroniclers of current events and other materials of interest to the reading public and, from the 1880s to the 1930s, the most important educative institutions in the United States. It was the ingenuity of Richard Hoe, a manufacturer of printing presses, that transformed newspapers into a mass medium. First, Hoe invented the "lightning press" in 1847, which printed 8,000 sheets an hour; his web press lifted production to 20,000 sheets an hour; and in 1871, his "double supplement perfecting press" printed, cut and folded 24,000 12-page newspapers an

hour. An improved version doubled that production figure at a time when fewer than 20% of American youngsters went to school and tens of thousands of foreign immigrants were flooding the United States.

It was Joseph Pulitzer, a Hungarian-born St. Louis reporter-turned-publisher and later U.S. congressman who, more than any other person in the newspaper world, made Americans want to read newspapers and participate in the governance of their country. At the time, most newspapers seemed like endless blocks of monotonous print—often written in a style too complex for the average American to understand. Pulitzer transformed the content and character of the newspapers he bought and, in so doing, produced models for a new generation of publication that every newspaper in the United States had to imitate or face extinction. In 1878, the former reporter bought the *St. Louis Post* and the *St. Louis Dispatch* and merged them into the *St. Louis Post-Dispatch*. Five years later, he moved to New York and bought the *New York World*, which became his flagship publication and which he determined would be “both schoolmaster and tribune” to its readers. It would both teach them and champion them.

There were six elements in Pulitzer’s transformation of newspapers into a mass educative institution and the prototype of the modern American newspaper. Although taken for granted today, Pulitzer’s innovations were dramatic in his era. First, he introduced lurid material designed to draw the attention of a mass audience. Without readers, he reasoned, he would only be “instructing” the minority of Americans who were already literate. So he added crime and scandal stories. Next, he revolutionized newspaper design, adding eye-catching graphics—huge two- and three-column headlines in large type sizes never before used. The third new element introduced by Pulitzer was aggressive, creative reporting and the use of his newspaper to further whatever he saw as

the public interest. Thus, he sent reporter “Nellie Bly” (pen name for Elizabeth Cochrane) as a feigned victim of insanity into the Blackwell Island asylum to expose the horrors there. His newspaper led the campaign that raised enough “pennies” from American children and other ordinary citizens to pay for construction of the pedestal for the Statue of Liberty.

The next, startling element that Pulitzer introduced was illustrations: engravings of photographs, cartoons, illustrations with an X to mark the spot of a murder, and comic strips for children that were as popular among adults as they were among children but drew an entirely new, juvenile reader to the newspaper. The fifth new element Pulitzer introduced was a recognition of the segmentation of the American population and the introduction of special-interest journalism to appeal to different groups of readers. To avoid losing male readers, he increased coverage of sports and recreation, sending reporters to produce dramatic coverage of every competitive spectacle. But he also added articles for women, including a variety of self-help features on use of cosmetics, interior decoration and cooking and a regular column on etiquette and good manners. A special section called “Youth Department,” in appreciation of the customers of the future, printed puzzles, stories and comics.

Last, but by no means least, Pulitzer redesigned the presentation of advertising, which had hitherto consisted of one-column statements separated by only a black line from the newspaper’s other reading matter. Pulitzer spread ads across three columns or more, adding illustrations, slogans and other graphics designed to attract attention and make his newspapers more exciting. Even his advertising proved educational for readers, by informing them of the latest styles in clothing and personal grooming and informing them about sales in department stores that saved them money for other purposes.

The result was similar to what PHINEAS T. BARNUM had done for the embryonic museum industry. By adding entertainment to what was essentially an educative institution, Pulitzer produced—and forced his competition to produce—a product that engrossed the American people and became their most important source of knowledge in a period when only the wealthiest children could afford not to work and thus go to school. The *World* informed them about city, state, national and world news, about municipal, state and national politics and life and events in exotic foreign lands that most readers would never see. It described the wonders of science and the thrill of sports. It taught mothers how to raise their children and taught voters to understand political issues and encouraged them to vote and exercise their rights. Its huge headlines helped immigrants to learn to read; its comic strips and stories taught children of all national origins to read. And it brought social change in the interests of its readers by campaigning for the eight-hour day, Saturday half-holidays and weekly pay checks.

Initially the sole newspaper of its kind in the world, Pulitzer's *New York World* soon had competition from other publishers, including the wealthy William Randolph Hearst, who worked as a reporter on the *World* to learn Pulitzer-style journalism before buying the ailing *New York Morning Journal*, which he renamed the *Journal* (later the *Journal-American* after a merger). Hearst converted the *Journal* into a paper that constantly attempted to “out-Pulitzer” Pulitzer. The result of the competition was a deterioration of some journalistic standards but an enormously heightened public interest in newspapers that raised circulation and, ultimately, the level of public awareness of current affairs to a peak it would never reach again in American history. Indeed, from 1870 to 1910, the number of daily newspapers in the United States increased from 574 with a combined circulation of 2.6 million to a peak of about 2,600

with a circulation of more than 23 million on weekdays and 65 million on Sundays.

The number of newspapers began declining after World War I, with the advent of radio, which offered an immediacy to the news that newspapers could not match. Indeed, by the time most news appeared in print, radio had made it 12 to 24 hours old. The number of daily newspapers in the United States declined to just under 1,300 by 1923, but they recovered over the next three decades by expanding the entertaining element of their information-entertainment mix, adding more comics, more sports coverage, more magazine-style articles, more sensational headlines, more attractive graphics and four-color printing. The advent of television as a popular medium in the 1940s and 1950s, however, provoked a massive decline in the number of daily newspapers. By 2004, only about 1,450 dailies remained. Only about 100 had a circulation of more than 100,000, and only three had a circulation of more than 1 million: *USA Today*, the specialized *Wall Street Journal* and the *New York Times*.

The surviving newspapers responded not only with efforts to improve the mix of information and entertainment, they also expanded their direct role in American education by offering elementary and secondary school teachers across the United States specially priced “school editions” to complement classroom instruction. The effort came to an abrupt end by the late 1990s with the introduction of classroom computers with which students could access news over the Internet. By 2000, 50% of American elementary and secondary school students were using computers and accessing the Internet in their classrooms. By 2005, nearly every school library in the United States had computers with connections to the Internet, thus reducing the need to buy and stock hard-copy newspapers and periodicals—and many books, for that matter.

Newton, Sir Isaac (1642–1727) English physicist and mathematician whose works, along with those of JOHN LOCKE and SIR FRANCIS BACON, formed the basis of secular higher education in the American colonies. Part of the intellectual upheaval that followed England's GLORIOUS REVOLUTION, his *Principia mathematica* (1687), along with the writings of John Locke, changed colonial intellectual life from a derivative, English culture to an independently creative culture. It produced new American intellectuals such as BENJAMIN FRANKLIN and THOMAS JEFFERSON, who grew increasingly willing to throw off the fetters of England's Crown, church and ecclesiastical educational traditions. Just as Locke's works provoked independent political thought, Newton's provoked independent scientific thought that permitted the viewing of natural phenomena as other than acts of God. In terms of formal education, Newton's works formed the basis of the natural sciences that became the heart of the first science curricula in colonial academies and colleges. A fierce opponent of church involvement in education, he helped lead resistance at the UNIVERSITY OF CAMBRIDGE to efforts by King James II to Catholicize it. Newton's struggle inspired Benjamin Franklin to ban the teaching of religion from the curriculum of FRANKLIN'S ACADEMY in Philadelphia and Thomas Jefferson to do the same at the UNIVERSITY OF VIRGINIA.

New York Eleventh of the original 13 states and traditionally a leading state in manufacturing, commerce, foreign trade, communications, finance and education. It remains one of the world's greatest centers of education, with more than 324 institutions of higher learning. Named in the 1660s for the duke of York (later King James II), it began as a royal province granted to the duke by his brother King Charles II. As a province, however, its educational system was unexceptional, although the Duke's Laws in 1665 required that all children and servants be

required "to read and understand the principles of religion and the capital laws of this country." By 1689, the province had only 11 formal schools, although some education was available in churches and so-called DAME SCHOOLS operated in private homes. The first college was not established until 1754, when the SOCIETY FOR THE PROPAGATION OF THE GOSPEL IN FOREIGN PARTS, the powerful Anglican missionary organization, obtained a charter from King George II and founded King's College (later COLUMBIA UNIVERSITY) as an Anglican theological institute to train more missionary priests.

New York was, nevertheless, a center of intellectual ferment, and with independence Governor George Clinton (1739–1812) warned the New York State legislature, "Neglect of education is among the evils consequent on war. Perhaps there is scarce anything more worthy of your attention than the revival and encouragement of seminaries of learning." He called on the legislature to revive King's College (closed for eight years during the Revolutionary War), to build a new college in Schenectady and to span the state with public schools that would open education "to people of every rank."

The legislature responded by passing a bill in 1784 creating a board of regents made up of two representatives from each county to oversee Columbia College (whose name had been changed to sever all ties to the English Crown) and all other existing schools in the state. In 1795, the legislature chartered a new college in Schenectady (Union College) and ordered the board to encourage development of new schools and colleges; it also provided for annual appropriations to share the cost of operating schools in towns that taxed themselves to operate their schools.

In 1812, the state enacted sweeping legislation that created a huge school system comprised of public elementary and secondary schools, on the one hand, and a university sys-

tem on the other. By then, Union College and Hamilton College, which was chartered in 1812, had joined Columbia as part of the University of the State of New York, a huge, amorphous system that eventually included museums, libraries and historical societies as well as schools and colleges. Although each college had an independent board of its own, the Board of Regents had sole control over public elementary and secondary school standards and policies for everything but day-to-day operations, which were left in the hands of local citizens.

In 1814, the legislature guaranteed the survival of the public school system with legislation that permanently authorized the state to make up any deficits in annual school budgets by taxing all but the poorest parents of schoolchildren. It made no provision for the state's colleges, however. As they found it increasingly difficult to obtain state funds, they gradually evolved into private institutions guided by their own trustees and administrators and funded by private donors. Except for an agricultural college at Cornell University, the state would have no public state university until after World War II. In the meantime, the Board of Regents expanded its public and secondary educational facilities, making them all tuition free in 1867. In 1913, the board established a state scholarship program that by the 1990s provided 25,000 scholarships to New York State student residents planning to attend New York institutions of higher learning. At the same time, it became the first state to establish minimum educational standards in public elementary and secondary schools by developing a set of competency tests to measure student achievement levels. Called the Regents Examinations, they are administered at the end of each school year. All public school students are required to pass the examinations before they can be promoted to the next higher grade or graduate from high school.

Although New York City had established a free public college for men in 1847 and another for women in 1870, the state's only free colleges were a handful of scattered colleges and so-called NORMAL SCHOOLS to train teachers for its system of public elementary and secondary schools. In 1948, the state legislature established the State University of New York, which absorbed 32 colleges into its system to become the world's largest university system. It consisted of 11 teachers colleges, six agricultural and technical institutes, five statutory colleges and five institutes of applied arts and sciences, which later became community colleges.

During the 1960s, the regents reshaped the teachers colleges into liberal arts colleges, founded university centers offering graduate studies and built a system of 35 community colleges and technical institutes. The system is now divided into two huge public university systems—one for NEW YORK CITY alone, the other for the rest of the state—with a total of 80 institutions, an enrollment of more than 800,000 students and a faculty of more than 18,000. Each system has a separate board of trustees, and each operates its own community colleges. The State University of New York has four research campuses, in Albany, Binghamton, Buffalo and Stony Brook, 12 comprehensive colleges and 14 specialized and technical colleges. The CITY UNIVERSITY OF NEW YORK has 20 campuses in the five boroughs of New York City; 11 senior colleges, six community colleges and three graduate and professional schools.

In all, the state has 45 public four-year institutions of higher learning, 35 public two-year colleges and a very high 175 private four-year colleges and 54 private two-year colleges—in all, more than 300 institutions, with more than 1.1 million students. About 58% of all students are women, and the graduation rate for the nearly 825,000 students in four-year colleges is about average for the nation at

55%. Besides Columbia, which encompasses Barnard College for women, its most notable institutions include NEW YORK UNIVERSITY, the Juilliard School (of music), ROCKEFELLER UNIVERSITY, Yeshiva University, Fordham University, Saint John's University, the U.S. MILITARY ACADEMY, Cornell University, RENSSELAER POLYTECHNIC INSTITUTE, Colgate University, Hamilton College, Syracuse University, Union College, VASSAR COLLEGE and the University of Rochester. New York State's public school system has nearly 4,350 elementary and secondary schools, with a total enrollment of 2.9 million students. About 45% are minority students and 19% live in poverty. Despite low academic achievement in poverty-plagued inner-city schools, student academic achievement in New York State's public schools are above the national averages in all subject areas. The state's nearly 2,000 private elementary and secondary schools—many of them world renowned—educate an additional student population of nearly 500,000.

In addition to its formal educational institutions, New York State is the foremost cultural center of the United States, with such important educative institutions as Albany's New York State Museum, Buffalo's Albright-Knox Gallery, Yonkers's Hudson River Museum and New York City's METROPOLITAN MUSEUM OF ART, Museum of Modern Art, Whitney Museum of American Art, Solomon R. Guggenheim Museum, Frick Collection, Pierpont Morgan Library, National Museum of the American Indian, AMERICAN MUSEUM OF NATURAL HISTORY, New York Zoological Park, New York Botanical Garden, Brooklyn Botanic Garden and Brooklyn Museum. New York City is the major American center for the performing arts. Lincoln Center for the Performing Arts houses the Metropolitan Opera Company, the New York Philharmonic and various ballet companies, while the Broadway-Times Square area is the mecca of American theater.

New York Association for Improving the Condition of the Poor A private group organized in 1843 to carry on mission work among New York City's poor by offering religious services, prayer meetings, libraries, industrial classes and employment referral services. The association was an offshoot of the New York City Tract Society, which had been organized in 1827 to distribute appropriate scriptural materials to Sunday schools and to educate the general public against intemperance, swearing and failure to observe the Sabbath. Its only successes at drawing audiences of any consequence were usually in the poorer sections of the city, and it gradually concentrated on holding prayer meetings, Bible classes and charitable activities for the city's unchurched poor. Even this audience began declining in number, and the Tract Society quickly realized it would lose the last targets of its proselytization efforts if it did not offer them something more immediately rewarding than the promise of salvation in the afterlife. In 1843, it pioneered public education by expanding into practical education and organizing the New York Association for Improving the Condition of the Poor, which added libraries, industrial classes and employment referral services to its programs of religious services and prayer meetings.

New York City One of the world's leading commercial, financial, cultural and educational centers, with more colleges and universities than any other city in the world. From its beginnings as a trading post in the Dutch colony of NEW NETHERLAND, education has been central to the city's cultural traditions. First settled in 1609, New Amsterdam, as it was called, opened its first school in 1638, when the Dutch Reformed Church appointed Adam Roelantsen as the colony's first teacher and he opened what is believed to have been the first elementary school in the area—a school to which the prestigious, present-day Collegiate School traces its

roots. Seized by the English in 1664, 40 years later New York became the site of the first school for Negroes in the colonies. Although the school closed in 1724, a second, similar school opened in 1760, and the city remained one of the most important educational havens for blacks in the colonies—and, later, in the United States—for the next century.

In 1754, the city became the site of King's College (now COLUMBIA UNIVERSITY), the fifth college founded in the English colonies and one of the breeding grounds for all-inclusive, urban public education. After the city had recovered from the devastating effects of the Revolutionary War (which forced the closing of King's College for eight years), a host of church-run schools, some private, some operated as charities, accommodated the city's wealthy children as well as the swarms of homeless, unemployed children that roamed the city streets. When the state legislature enacted its landmark public school subsidy bill in 1812, the city used its share to subsidize charity schools. The latter were perceived as public institutions, in that they were open to all, although operated by churches and religiously oriented mission groups such as the Quaker Free School Society (renamed the Public School Society in 1826), the Orphan Asylum Society and the Manumission Society, which operated schools for African Americans. By 1860, schooling was more widely available in New York City than in any other major city or, indeed, any other region of the United States. Of the total population of slightly more than 800,000, more than 150,000 were enrolled in public schools and almost 15,000 more were enrolled in Roman Catholic schools—in addition to the uncounted thousands enrolled in charity schools and in the growing number of ethnoreligious schools operated by such varied groups as Swedish Lutherans, German Reformed, African-American Methodists and others.

Higher education began expanding as well. Columbia College grew into a university, absorb-

ing the College of Physicians and Surgeons in 1860 and adding a School of Mines in 1863. The University of the City of New York (later NEW YORK UNIVERSITY) was founded in 1831 to provide a utilitarian alternative to the elitist academic programs of Columbia. St. John's College (later Fordham University) was founded in 1841 and St. Francis Xavier College in 1847, along with the Free Academy, which later became the public College of the City of New York, an undergraduate division of today's CITY UNIVERSITY OF NEW YORK. In addition, a myriad of college preparatory schools, some of them adjuncts of the colleges themselves, had sprouted throughout the city—primarily because the city had no free high schools as yet. (The first of these did not open until 1897.) In 1857, for example, the Peter Cooper Union for the Advancement of Science and Art opened as both an academy and a college, even opening its doors to women.

Beyond the traditional colleges of arts and sciences were a myriad of independent professional schools of law, medicine, pharmacy, veterinary medicine and dentistry, most of which would later be absorbed by the city's largest colleges as the latter expanded into giant universities along the model that Harvard would establish from the 1880s to the early 1900s.

In addition to its formal educational institutions, the city was also becoming a center of informal educative institutions that served the millions of unschooled immigrants arriving at the city's piers each day. In addition to the New York Society Library, dating back to the colonial era and by 1831 the third largest in the United States, the Astor Library, the Mercantile Library, the Apprentices' Library, the Printers' Free Library, the Women's Library, the New York Catholic Library and the Maimonides Library offered New Yorkers endless opportunity to acquire knowledge and skills free of charge. Moreover, the New York Athenaeum offered a reference library, a reading room, a

museum and lectures, as did the Lyceum of Natural History, the Historical Society, the Literary and Philosophical Society, the Academy of Fine arts and the world renowned Barnum's Museum. To these, the opera houses, theaters and music halls added another type of education, along with the enormous printing industry producing books, pamphlets, tracts, magazines, daily newspapers and specialized periodicals. New York, in short, offered the greatest range and diversity of experience of any city in the United States—a conduit between international and national education and the pedagogical center of the United States.

The city remained in the forefront of American education. It had little choice. Its population exploded to about 7.5 million by 2000, with more than 24%, or nearly 1.9 million, living below the poverty level of about \$17,000 for a family of four. The population explosion was largely fired by waves of immigrants from Italy, Russia, Ireland, Germany, Poland, Austria, Puerto Rico and a host of Latin American, Asian, African and Middle Eastern countries, along with migrant, native-born blacks and other racial and ethnic groups from other parts of the United States. As the 20th century came to a close, the city's population mix had changed radically, with blacks making up about 29%, Hispanics about 25% and Asians 7%, leaving whites in a distinct minority.

To accommodate so complex a population configuration required an equally complex educational system of traditional elementary, middle and secondary schools and colleges, along with specialized academic and vocational schools and special schools for the population of exceptional children—delinquent, physically handicapped, mentally handicapped, etc.—that so huge a population inevitably produces. Unlike schools in smaller communities, many of these institutions had to provide health and welfare services as well as formal education. Moreover, the constant arrival of foreign-born

immigrants and unskilled migrants required schools that provided adult education at night and on weekends.

The result was the largest educational system in the United States. The student population in public elementary and secondary schools alone doubled from about 500,000 in 1900 to more than 1 million in 1930 and ranged between 900,000 and 1 million for the rest of the 20th century. White students make up less than 15% of the student population in the city's 1,200 elementary and secondary public schools. Blacks, both African-American and foreign-born, make up 35%, Hispanics 38% and Asians about 12%. More than 12% of students are enrolled in part-time or full-time special education, and a startling 28.2% of students live in poverty, compared with a national poverty rate for school-aged children of 15.1%. Although sweeping public school reforms from 2002 to 2004 raised academic proficiency levels of elementary school children more than 14% in reading and 7.5% in math, the improvements nonetheless left only about 52% of students proficient in reading and math, while more than 43% of children were reading below grade level or worse and 50% were performing below grade level or worse in mathematics. Moreover, the racial gap remained distressingly high, with 14% of black children and 16% of Hispanic children scoring at or above proficiency in reading, compared with 46% of white children. Public secondary schools have a graduation rate of only 53.2%. One result of the evidently low quality of public school education has been a chronic flow of wealthy children into private, independent day schools and independent boarding schools and an equally steady flow of children from Roman Catholic families and lower-middle-income non-Catholic families into parochial schools. Enrollment in Roman Catholic schools in the New York Archdiocese was more than 100,000 in 2006.

New York City has the largest concentration of colleges and universities of any city in the world. The College of the City of New York was founded in 1847 as the Free Academy to provide free education to deserving young men. HUNTER COLLEGE was founded in 1870 as a teachers college, then expanded into a four-year liberal arts institution for deserving young women. Brooklyn College was founded in 1930 and Queens College in 1937 to provide free education in those boroughs and, with City College and Hunter, to form the core of the huge City University of New York that would expand to 20 campuses. It now serves more than 450,000 students at 11 four-year colleges, 6 two-year community colleges, a graduate school, a law school and a school of biomedical education. In addition to the public universities, the city's private institutions of higher learning include nearly two dozen colleges and universities such as Columbia, NYU, Fordham and St. John's, along with dozens of specialized schools and institutes, such as the Juilliard School of Music, Parsons School of Design, ROCKEFELLER UNIVERSITY, Jewish Theological Seminary, the School of Visual Arts and others.

Like its colleges and universities, the city's elementary and secondary schools include, in addition to public elementary and secondary schools, an enormous number of private religious and independent schools and innumerable entrepreneurial schools that provide instruction in dancing, foreign languages, bartending and every other imaginable craft and skill.

Moreover, the formal educational facilities of the city have been supplemented for more than a century by the largest agglomeration of informal educative institutions in the United States: the METROPOLITAN MUSEUM OF ART, Museum of Modern Art, Whitney Museum of American Art, Solomon R. Guggenheim Museum, Frick Collection, Pierpont Morgan

Library, National Museum of the American Indian, AMERICAN MUSEUM OF NATURAL HISTORY, New York Zoological Park, New York Botanical Garden, Brooklyn Botanic Garden and Brooklyn Museum, plus Broadway's multitude of theaters and Lincoln Center for the Performing Arts, with the Metropolitan Opera Company, the New York Philharmonic and various ballet companies.

For most of the millions of immigrants, migrants and native-born Americans who have lived in or passed through New York during the 19th and 20th centuries, the city's educational and educative institutions have provided springboards to personal improvement and, for most, an escape from the poverty and joblessness that has always pervaded the slums of New York and other major cities of the world. Indeed, the city's public school system pioneered the establishment of so-called MAGNET SCHOOLS to attract the most gifted and talented youngsters and provide them with free, specialized training to allow them to exploit their talents. Thus, Stuyvesant High School offers a broad liberal arts education for the academically gifted, while the Bronx High School of Science and La Guardia High School (formerly the High School of Music and Art) offer curricula that concentrate heavily on specific areas, although all students are exposed to a minimum number of courses in English, history and other core subjects from the standard high school curriculum.

If the system has failed any of its myriad ethnic and racial groups, the biggest failure has been in the black and Hispanic communities, where schools remain not only substandard but also resistant to improvement—despite huge, costly, periodic efforts to reform them. Schools in the poorest black and Hispanic neighborhoods of New York (as in comparable neighborhoods in every other major American city) suffer from the highest rates of failure, retardation, absenteeism and drop-outs. In the

mid-1990s the city's public schools once again launched a program of reform by opening 37 small, experimental schools, each with a curriculum centered on a separate theme, varying from pure academics to vocational studies. Behind the experiment was the desire to see whether small classes in small institutions can alter the rate of failure that minority students now experience in the city's full-sized high schools, some of which have as many as 5,000 students.

Those efforts continue apace, as 36 small, specialized middle and high schools—100 to 300 students each—have opened in 2006. Most schools in poor black and Hispanic neighborhoods of New York remain overcrowded, however: High schools built for 1,500 or 2,000 students cram as many as 5,000 students into hallways, maintenance areas and storage rooms as well as classrooms. Like most major cities, New York is unable to coax adequate funds for education from a state legislature dominated by rural communities that refuse to share resources with major cities. Nonetheless, city school officials are attempting to double the number of children attending prekindergarten, expand high school job-skills training for the least academically inclined and offer more advanced classes for the academically gifted. New York City doubled the number of its CHARTER SCHOOLS to 100 from 2000 to 2006, expanding SPECIAL EDUCATION and adding more programs for non-English-speaking students. To reduce student failure, the city has a mandatory, 371/2 minutes-a-day, Monday-through-Thursday, after-school tutoring program for more than 25% of New York City students. The city also holds Saturday classes and summer schools for struggling students, and it is gradually trying to break up its largest schools into smaller, SCHOOLS-WITHIN-SCHOOL that would avoid costly school construction projects by dividing existing facilities into manageable units. Like the freestanding small schools men-

tioned above, the schools-within-a-school are often specialized. Examples include the Academy of Hospitality and Tourism High School; the East-West School of International Studies, which specializes in teaching Asian languages; and the Dream Yard Preparatory School, which uses visual arts and theater techniques to teach mathematics and other academic subjects.

Although continuing reforms have improved academic performance, the high percentage of failing black and Hispanic students remains an all-but-intractable problem. Unlike New York's ethnic ghettos of the late 19th and early 20th centuries, today's ghettos appear unable to spew most of their second- or third-generation offspring into the general American population to assimilate. Indeed, far from disappearing as earlier ghettos did, today's New York's ghettos are swelling with new immigrants. Regardless of their experiences at school, children who return home each afternoon to families and friends who do not read, write or speak English fluently never have an opportunity to use English in their daily lives.

The record of such schools ranks among the worst of any schools in the United States. Indeed, New York City public schools had a drop-out rate of more than 40% as they ended the 1990s. Part of the problem was the result of the unwieldy size of the system, with an administrative apparatus that absorbed more than 30% of school spending and left less than 45% for instruction of a school population of which 70% were largely poor minority students. U.S. public schools as a whole earmark more than 55% of their budgets for instruction. Moreover, the huge administrative bureaucracy was riddled with corrupt purchasing practices, nepotism and custodians earning \$100,000 annually (compared to teacher salaries averaging \$50,000). Periodic criminal investigations produce few indictments or changes in the powerful administrative bureaucracy and, therefore, few reforms in education.

(See also NEW YORK [state]; AFRICAN-AMERICAN EDUCATION; HISPANIC AMERICANS.)

New York Society for the Prevention of Pauperism A pioneering organization established in 1816 to identify and eliminate the specific causes of poverty in New York City. The group made the first scientific attempt to collect and disseminate data on poverty, using as subjects the vagrants who at the time were threatening to overrun the city. Most of the data proved useless, and the society concluded that the only solution was to create a “reformatory,” which it named the House of Refuge. Built as a residential facility, the House of Refuge opened in 1825 as a school for young vagrants to provide moral rehabilitation by teaching mechanical skills. Within a year, New York State designated the House of Refuge its official state agency in New York City for the rehabilitation of juvenile delinquents—the first in the United States and one that would serve as a model for similar institutions elsewhere for more than a century.

New York University (NYU) New York City’s second-oldest university, with a total enrollment of nearly 40,000 students and, from its founding in 1831, a pioneer in utilitarian higher education. A private, independent, coeducational institution, NYU was founded as the University of the City of New York by “a gathering of literary and scientific gentlemen” who insisted that all elements of the curriculum in their new institution be put “to the test of practical utility. . . .” From its founding, NYU has been a philosophical rival to COLUMBIA UNIVERSITY, New York’s oldest college, founded in 1754 as the ecclesiastically oriented King’s College. Although Columbia changed its name after the Revolution to avoid accusations of Toryism, it remained a college for the elite with a curriculum oriented toward the liberal arts

and sciences. Indeed, in 1880, as Columbia created its first “nonprofessional” graduate school, the School of Political Science, it explained its goal as one “designed to prepare young men for the duties of public life,” while its humanities courses were offered to satisfy students’ love of knowledge.

In contrast, Henry Mitchell MacCracken, NYU’s president from 1891 to 1910, wrote in 1892, “The notion of a university as a place to give men knowledge without reference to anything in particular and without their earning their livelihood is a nonsensical notion. The first work of the university is to train men for the dozen different professions which may be properly so-called.” In creating what he called “A Metropolitan University,” MacCracken and his successor, Elmer Ellsworth Brown, who was president from 1910 to 1933, absorbed the Bellevue Hospital Medical School, the New York American Veterinary College and the New York College of Dentistry. In addition, the university started a School of Commerce, in collaboration with the New York State Society of Certified Public Accountants; a School of Retailing, in collaboration with a group of New York’s department stores; a College of Fine Arts, in collaboration with the National Academy of Design; a program in advertising, in collaboration with the Advertising Club of New York; and an Institute of International Finance, in collaboration with the Investment Bankers’ Association of America. Subsequent additions—all keeping with the university’s policy of utilitarian education—included schools of education, health and nursing, performing and media arts, business, social work and public service. Thus, in addition to its traditional undergraduate college of arts and sciences and its renowned research facilities, NYU established schools designed to prepare New York City men and women for New York City’s major industries and became a model for similar universities across the United States.

night school An obsolete synonym for adult education. Used prior to World War II, night school was any educational institution that provided formal education during evening hours for people who worked during the day.

No Child Left Behind Act of 2001 A revision and reauthorization of the ELEMENTARY AND SECONDARY EDUCATION ACT OF 1965 to make every primary and secondary school student proficient in English, mathematics, science and other core subjects by the 2013–14 academic year. To achieve that goal, the \$10 billion-a-year law requires every school to demonstrate

year-to-year improvements of at least 2% in student academic performance—or face loss of federal subsidies. Each state must demonstrate student academic performance by testing students annually in English and math in grades 3 through 8 and at least once during their four high school years. Schools must test students in science at least once during each of three grades spans—3 to 5, 6 to 9 and 10 to 12. Schools must also ensure that “English-language learners” achieve fluency in English and master all school academics. NCLB requires teachers of core academic subjects to demonstrate knowledge of their subjects either by



President George W. Bush signs the No Child Left Behind Act into law on January 8, 2002. (Associated Press)

having majored in those subjects in college or by passing subject-matter tests. Aimed especially at schools with disadvantaged children, NCLB allows parents in schools that fail to reach state achievement goals after three successive years to transfer their children to other schools or to charter schools and to use \$500 to \$1000 of federal moneys paid to the schools for private tutoring and after-school and summer school classes. Some \$2 billion in NCLB funds are set aside for tutoring programs. NCLB encourages states to replace the curricula and staffs of schools that fail to make academic progress after four consecutive years.

Although many educators hailed NCLB for establishing minimum national academic standards, opponents charged that it violated the Tenth Amendment of the Constitution, which leaves to the states all powers not expressly conveyed to the federal government by the first nine amendments. The word *education* does not appear in any of those amendments and has therefore always fallen under state purview. By accepting federal grants to education, however, school districts tacitly accept the conditions that come attached to any loan or grant in aid, and, with the federal government providing about \$55 billion, or 10% of what states and local districts spend on public elementary and secondary education, the states had little choice but to accept NCLB or forfeit federal aid. Some school districts did just that—in Connecticut, Illinois, Vermont and Virginia, among other states. Some states challenged the law on the basis that the federal government underestimated the costs of administering the law and has forced states and local school districts to spend local tax dollars to enforce a federal law. A federal court rejected the challenge, however, on the grounds that the states and local districts have the option of withdrawing from NCLB.

To try to end state and local challenges to the law, the U.S. Department of Education

allowed states to select their own tests to measure student academic proficiency each year, although it insisted that students continue to participate in the NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS testing program. The results muddled the entire assessment picture, as many states used tests that allowed students to score startling gains while showing negative progress on federal NAEP tests. In effect, the states adopted low standards and grade inflation. State tests found 89% of Mississippi fourth graders proficient in reading in 2004–05, for example, but NAEP testing found only 18% to be proficient. Similarly, 79% of nine-year-olds were proficient in reading on the state test in Texas, but only 29% on the national test. Here are some of the widest testing disparities:

	Percent Proficiency	
	State Tests	NAEP Tests
Alabama	83	22
Arkansas	61	28
California	39	21
Colorado	63	37
Connecticut	67	38
Florida	60	32
Georgia	87	26
Idaho	90	41
Louisiana	14	20
Maine	53	36
Massachusetts	56	40
Michigan	75	32
Mississippi	89	18
New Jersey	82	38
New York	70	34
No. Carolina	81	33
So. Carolina	36	26
Tennessee	88	27
Texas	79	29
Vermont	81	37
Wisconsin	80	33

The results were similar for fourth grade math tests and for both eighth grade reading

and math tests. Confusing matters still more were the annual yearly progress (AYP) findings, which showed student proficiency progressing at the minimum acceptable rate of 2% in only 28 states, and, in fact, average NAEP scores in reading for both fourth and eighth graders in 2005 showed almost no change since data were first collected in 1992. About 64% of fourth graders and 73% of eighth graders score at or above “basic,” and only about 30% in either grade are “proficient” in reading. About 36% of fourth graders and 30% of eighth graders were proficient in math, and federal officials faced the realization that reducing federal aid to failing states, as required under NCLB, would only accelerate rates of failure. Only 36% of graduating seniors are proficient in reading, and only 17% are proficient in math. Student scores in science are equally dismal: 29% of fourth and eighth graders and a mere 18% of 12th graders displayed proficiency in 2006—a slight decline, on average, since 1996. Although 22 states met their AYP goals for English-language learners in speaking and understanding English, only two met the requirements for such students in reading, and only five met targets in math. Even more discouraging was the failure of all but 10 states to make any progress closing the so-called achievement gap in academic proficiency between white students and the nation’s burgeoning minority students.

If NCLB has proved less than effective in the nation’s schools as a whole and a disaster for minority students, it has proved a borderline disaster in districts with academically superior schools whose standards are already so high they are unable to register the required “annual yearly progress” and thus stand in technical violation of the law and risk sharp reductions in federal funds.

Nomini Hall The huge plantation manor owned by the Robert Carter family in Westmoreland County, Virginia. In the sparsely settled

southern colonies, house-based education was more commonly found than in the North, where church-based education was the norm. Nomini Hall is of interest to educational historians because of a journal kept by one of the family’s tutors, Philip Vickers Fithian, who painted perhaps the most complete picture available of education among the landed gentry of 18th-century pre-Revolution Virginia and, indeed, most of the rest of the South. In 1773–74, the two Carter sons, five daughters and a nephew were under the tutelage of Fithian, who taught a curriculum that ranged from teaching Harriot Lucy Carter, age seven, her first letters to advanced reading in Latin from the works of the Roman historian and politician Sallust. In addition, he catechized the children, taught and drilled them in arithmetic, taught them letter writing and even accompanied them to dances at neighboring plantations. In addition to Fithian, the Carters retained a music instructor, dancing master and governesses to assure the children a complete education.

Mrs. Carter added to her children’s education by reading from the Scriptures and teaching the girls “housewifery,” a not insignificant task in so huge an institution as Nomini Hall, with its staff of stewards, clerks, artisans, domestics, overseers and hundreds of slaves. Aside from the art of conversation and skill in pouring tea for guests, issuing the endless directives to the staff and supervising the purchases and accounts for the household was in itself a major task in management, as was management of the plantation by Mr. Carter. In effect, he was the autocratic leader of an enormous community and enterprise requiring skills as a planter, landlord, manufacturer, physician, judge and councilor—skills he taught and passed on to his sons. The Civil War put an end to plantation-based education in the South and, indeed, to the Nomini Halls. Those southern families fortunate enough to rebuild their fortunes by the

end of the 19th century turned to northern boarding schools to educate their children.

nonclassroom faculty Those members of the auxiliary personnel in a school such as school principals, librarians, guidance counselors and others who require formal degrees and state certification to provide their particular services to students outside the classroom.

nonoperating district A school district that has no public schools. Although managed by elected school boards, such districts usually have too small a school-aged population to warrant construction of a school. School-aged children living in such districts—often found on sparsely settled islands—usually attend schools in neighboring districts, although all their educational costs are paid for by the nonoperating district.

nonstandard English A variation of conventional English vocabulary, grammar and pronunciation that is so widely used as to constitute a vernacular. Generally used in the United States by distinct, minority socioeconomic groups, such as African Americans, Chicanos, Creoles, isolated mountain communities and so on, nonstandard English differs significantly from regional variations in English in that it is often unintelligible to speakers of conventional English. Examples of nonstandard English include BLACK ENGLISH and calypso English. Children and adults who learn nonstandard English as their native tongue, whether American- or foreign-born, have significant difficulties adapting to the use of conventional language in school.

nonverbal communications Those bodily movements, facial expressions, gestures, postures, personal contacts, tones of voice, articles of clothing and aspects of personal grooming that send others a message requiring no words.

Especially important to teachers, nonverbal communication may be used by itself—a frown at an unruly student—or in conjunction with words to add emphasis or an interpretive nuance that words alone would not convey.

norm In education, the average achievement or performance level of a preselected group against which others may be compared to determine whether they are above, below or at the norm. Norms provide additional, often essential, interpretive frameworks for raw, or absolute, test data. Thus, at the simplest classroom test level, a 100% scored by one student on a test becomes less impressive if every student in the class scores 100%, in which case 100% is the norm for that class on that test. Test norms may be established by averaging the scores of any of a variety of broad-based or narrowly based norm groups—for example, the entire American population at one extreme, and, perhaps at the other, 18-year-old, blond-haired, blue-eyed males less than 5 feet tall. For test results to have validity, they must be compared to results from the appropriate norm group.

normal distribution curve A bell-shaped graph representing the distribution of scores to form a symmetrical pattern, with the same number of scores evenly distributed on either side of a vertical line drawn from the baseline of the graph to the peak of the bell curve. In the normal distribution curve, which is also known as a Gaussian Curve or DeMoivre's Curve, the mean (average), mode (the score that occurs most often) and median (the middle score, with half the remaining scores above and half below) are identical.

normal school An archaic, early name for teacher training schools. The term is a translation of the French *école normale*, referring to a type of postsecondary school offering specialized education in fields not requiring university

or professional-level studies. Thus, TEACHER EDUCATION in 19th-century France was offered in *écoles normales*; after the first teacher training schools were established in the United States in the mid-19th century, many added *normal* to their names, as in Oswego Normal School. Although a small private normal school had opened in Vermont in 1823 and a second in Massachusetts in 1827, HORACE MANN was responsible for establishing the first state normal school in the United States in Lexington, Massachusetts, in 1839. By 1874, there were 134 normal schools in the United States, with 24,000 students. By 1900, the total had climbed to 345, 167 public and 178 private, with a total enrollment of 67,000. By 1910, most states had established public normal schools.

During the 19th century, normal school education was a two-year course of study. As pedagogy and education grew more complex in the 20th century, however, normal schools expanded their curricula to four years, granted bachelor's degrees in education instead of simple certificates and adopted new names as teachers colleges. By 1920, the number of state normal schools had dropped to 137, while 47 had become teachers colleges. By 1952, almost all normal schools had disappeared, replaced by more than 200 teachers colleges. Within 20 years, most of the teachers colleges were absorbed into larger, four-year colleges and universities where they became undergraduate departments of education and graduate schools of education, granting bachelor's and master's degrees and doctorates in education. More than 1,000 colleges and universities now offer degree programs in education.

norm-referenced test Any examination whose score is based on a comparison with the performance of a norm group or sample population. Most standardized tests of aptitude, intelligence and academic achievement are norm-referenced. For example, a score of 500,

in a range of 200 to 800 is the norm, or average, for college-bound students taking the SCHOLASTIC ASSESSMENT TESTS, used as an admission examination by many American colleges. It represents no absolute score, however. In any given year, the average absolute score of high school juniors and seniors taking the SATs may rise or fall; regardless of whether the average score is 40%, 50% or any other percentage on an empirical scale, it automatically becomes a 500. Similarly, the highest SAT score of 800 probably has no relationship to a perfect absolute score of 100%, just as 200 probably does not represent a zero.

Norm-referenced tests have come under criticism because of the use of questionable norm groups against which to measure all test-takers. Representatives of minority groups have been especially critical, saying that it is unfair to compare scores of students from sharply different socioeconomic backgrounds with a norm based on a sample made up largely of conventional, advantaged white students. Another criticism of norm-referenced tests is the difficulty of eliminating biased questions that may favor one group or another. Thus, average male verbal scores on the norm-referenced SATs remain stubbornly fixed at more than 1% above those of females, and average mathematical scores remain more than 7% above female scores. The SATs are designed to predict how well students will do academically during their first year at college, but, despite their lower SAT scores, women consistently outperform men in all subjects during their first year at college.

The alternative to norm-referenced tests are CRITERION-REFERENCED TESTS that compare scores to an absolute, or empirical, criterion—the specific percentage of correct answers, for example, or a specific score required for passing a driver's license test.

North Carolina Twelfth of the 13 original states in the Union, the first colony to instruct

its delegates to vote for independence at the First Continental Congress and the first state to open a state university, at Chapel Hill in 1795. First settled in 1585, the original colony, led by Sir Walter Raleigh, was abandoned a year later. A second colony of 121 settlers, led by John White, landed on Roanoke Island in 1587, and his granddaughter, Virginia Dare, was the first child born of English parents in America. White sailed for England for supplies the same year, but when he returned in 1590, all traces of the colony had vanished.

Although the first schools appeared in North Carolina in the early 18th century, the state did not act to establish public schools until 1839. Once one of the nation's lowest quality school systems, the state's public school system raised academic standards dramatically during the 1990s. North Carolina has more than 2,200 public elementary and secondary schools for more than 1.3 million students. Minority students make up 40% of the student population, and nearly 15% live in poverty, but academic proficiency has climbed to about average for the nation in reading and has surpassed the national average in mathematics—a reflection, perhaps, of demands for a better educated, better skilled workforce by the many universities and burgeoning industrial community that settled in the famed “Research Triangle” in and around Chapel Hill, Raleigh and Durham. One strategy that helped improve North Carolina public schools, according to the 5,000-member National Alliance of Business, was the award of hefty financial bonuses to the entire instructional staffs of high-achieving public schools. Rather than offer bonuses to individual teachers and provoke internecine competition, the alliance encouraged the faculty of underachieving schools to work together as teams to improve their schools and share the rewards.

North Carolina has also pioneered the development of residential MAGNET SCHOOLS for the state's gifted high school students in the

arts and sciences. In 1965, it opened the North Carolina School for the Arts for talented students in music, drama and the visual arts, and in 1980, the North Carolina School of Science and Mathematics.

A slave state prior to the Civil War, North Carolina has a strong tradition of private higher education. Its 49 private four-year institutions include Duke and Wake Forest Universities and Davidson College. There are also 14 private two-year colleges. There are 16 four-year public institutions of higher education and 59 public two-year colleges. The state has 11 historically all-black four-year colleges, six private and five public, with a total enrollment of more than 30,000, of whom more than 85% are blacks—a status jealously guarded by college administrators as essential to preservation of black culture in the South. The graduation rate at North Carolina's four-year colleges is 58%.

North Dakota The 39th state to enter the Union, in 1889. Missionaries opened the first school in the territory in 1818, and the territorial legislature made the first provisions for public education in the sparsely settled state in 1862. By the time the state entered the Union, almost 1,400 schools had been established. Fewer than 600 remain, for a student population of less than 105,000—11% of them minority students and 17% living in poverty. Eight percent of students are American Indians. Despite the second-lowest teacher salaries in the nation (South Dakota has the lowest) and despite per-student spending that is 22% below the national average, North Dakota public schools rank as fifth best in the nation, having spurred their students to remarkably high levels of achievement: Fourth graders rank 11th in the nation in reading proficiency and seventh in math proficiency; eighth graders rank fourth and third in the nation, respectively. Because of its rural, sparsely settled landscape, North Dakota has relied heavily on interactive video

networking to link the widely scattered public schools and community colleges to university campuses and a larger pool of professional educators. Many public schools with small enrollments rely on interactive television and the Internet for foreign language instruction, with a single teacher simultaneously able to reach any number of schools, none of which has enough students enrolled in a foreign-language course to warrant hiring even a part-time instructor. Other schools use portable classroom programs that bring special teachers and equipment in vans to each school for a term of eight to 12 weeks before moving on to other schools. The state has seven public and four private four-year colleges and universities and eight public and two private two-year colleges. There are five AMERICAN INDIAN TRIBAL COLLEGES, three of them public two-year schools: Candeska Cikana Community College, Fort Berthold Community College and Sitting Bull College. United Tribes Technical College is a nonprofit private college, and, despite its name, Turtle Mountain Community College is a public, four-year institution. The graduation rate for all four-year colleges in the state is less than 44%.

North Haven Board of Education v. Bell A 1982 U.S. Supreme Court decision that extended the reach of a law prohibiting gender discrimination in federally funded education programs to school and college employees as well as students. The decision settled a long-standing conflict in lower federal courts over the scope of Title IX of the EDUCATION AMENDMENTS of 1972. Title IX stated: "No person in the United States shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any education program or activity receiving federal financial assistance."

In their narrowest interpretations, lower courts ruled that the law protected only female students from bias in education programs

receiving U.S. government aid. But in 1975, the U.S. Department of Health, Education and Welfare expanded the interpretation to include education employment practices that had an impact on women; these included hiring and promotion policies, maternity leave and job assignments. The Court agreed with the broader interpretation, saying that the phrase "no person" in the language of Title IX appeared "on its face, to include employees as well as students."

Northwest Ordinance (1785, 1787) Two elements of the Articles of Confederation declaring education essential and reserving a specific amount of land in each township for public schools in the Northwest Territory, which comprised the area of present-day Ohio, Indiana, Illinois, Michigan, Wisconsin and part of Minnesota. The Ordinance of 1785 stipulated that the 16th, or middle, section of every township within the territory was to be reserved "for the maintenance of public schools." (A township was an area six miles by six miles made up of 36 sections one mile square.) The Ordinance of 1787 expressed its support for education as "necessary to good government and the happiness of mankind." It also declared the territory to be "free soil," in that no man born within its borders should be a slave. The ordinance stipulated that any part of the territory could apply for statehood when its population reached 60,000.

Nott, Eliphalet (1773–1866) Educator, clergyman, inventor and, for an unprecedented 62 years, the president of Union College, the first college chartered by the state government of New York after the Revolution. Born in Connecticut, Nott began teaching in a district school when he was 16, but he eventually went to BROWN UNIVERSITY, where he bypassed his bachelor's degree and earned an M.A. in 1795—the same year the New York state legislature chartered Union College in Schenectady

as part of the University of the State of New York. Ordained as a Presbyterian minister, he moved to New York, where he founded an academy in Cherry Valley, serving as minister, teacher and principal. In 1798, he moved to Albany, where he campaigned for reform of the Albany public system and was named a trustee of Union College. In 1804 he was named president of the college and began a career as one of the most progressive innovators in early 19th-century higher education. He introduced medical studies along with courses in agriculture and gardening, foreign languages and engineering—innovations adopted by almost all but the most elitist American colleges such as HARVARD and YALE. He was responsible for construction of an astronomical observatory at Union, and, while there, he invented and patented 30 scientific and engineering devices, including the first anthracite coal base-burning stove.

number line A horizontal line divided into equal units beginning from a central point marked zero and extending in either direction toward a theoretical infinity. The number line is a commonly used pedagogical tool for graphic depiction of the relationships of positive and negative numbers. Units to the right of zero are marked +1, +2, +3 and so on, representing positive numbers, while those to the left are marked -1, -2, -3, representing negative numbers. In addition to positive and negative numbers, the number line offers a graphic method for teaching basic arithmetic concepts such as addition, subtraction, multiplication and division.

number skills The understanding of and ability to use integers and numerical units. In education, the development of number skills begins in preschool and kindergarten. Although four- and five-year-olds are too young to do sustained writing and paperwork, they are

ready to learn numbers, letters and abstract concepts through experience and the use of concrete objects such as blocks, counting rods, sand, water, clay and other manipulative devices. Used in conjunction with numerical games, manipulatives can be used to introduce concepts such as “more than,” “less than,” “same as” or “equal to,” “half” and “twice as much,” so that students have a thorough understanding of basic mathematical concepts and operations by the time they enter kindergarten and first grade.

nursery school A school for three- and four-year-old children, prior to their entry into kindergarten and the formal elementary school setting. Also known as PRESCHOOLS, nursery schools as we know them today trace their origins to a cooperative nursery school established by faculty parents at the UNIVERSITY OF CHICAGO in 1916 and to a laboratory nursery school established in 1919 under the auspices of the New York City Bureau of Education. Both were founded at a time when the so-called CHILD STUDY MOVEMENT was reaching a peak, and both received widespread publicity among educated women interested in establishing the rearing and educating of children as something of an exact science. As a result, the AMERICAN ASSOCIATION OF UNIVERSITY WOMEN launched a national study of the effects of education on preschool-aged children that led to an explosion in the number of nursery schools.

Ironically, formal education of three- and four-year-old children was not really new. Indeed, even some two-year-olds and many three- and four-year-olds attended schools in the 18th century if they were mature enough or if circumstances required their care outside the home by a responsible member of the community while their parents worked. The 19th century, however, saw the belief spread that familial education was better than institutional training for young children, and by the 1870s

the age of initial entry into school for children who did not work had climbed to six and seven. Parents who had to work simply left young children with relatives or friends or in the care of older siblings during working hours.

The growth of cities after the Civil War and the wave of impoverished immigrants they attracted produced huge numbers of unattended children roaming the city streets. By 1890, New York City alone, with its population of 1.5 million, had an estimated 200,000 children under five years old—the overwhelming majority of them poor. The result was the appearance of so-called day nurseries organized by churches, charitable organizations and private entrepreneurs and concerned principally with children’s physical well-being, that is, feeding, bathing and keeping them off the streets. Because of the age range of the children, many nurseries doubled as kindergartens and vice versa. All, however, were crowded. Operating as they did, as much as 12 hours a day, six days a week, regimentation rather than play governed the day’s activities. Moreover, most day-nursery personnel were untrained; some supervisors were dull, others cruel. By the end of the 19th century, day nurseries had become targets of criticism by child advocates who insisted that prekindergarten children belonged at home in the care of their mothers.

In 1909, President Theodore Roosevelt told the Conference on the Care of Dependent Children of the need to help widowed mothers remain at home with their children. The conference ended with a resolution that stated,

Home life is the highest and finest product of civilization. It is the great molding force of mind and of character. Children should not be deprived of it except for urgent and compelling reasons. Children of parents of worthy character, suffering from temporary misfortune, and children of reasonably effi-

cient and deserving mothers who are without the support of the normal breadwinner, should, as a rule be kept with their parents, such aid being given as may be necessary to maintain suitable homes for the rearing of the children.

The resolution produced immediate responses by the Missouri and Illinois legislatures, which in 1911 enacted a law providing for the nation’s first mothers’ pensions—that is, direct payments of government funds to mothers to remain home to care for their young children instead of working. By 1918, 37 of the 48 states had followed suit, and by 1931, every state except Georgia and South Carolina had started mothers’ pension programs. In 1935, Congress passed the Social Security Act, with an aid-to-dependent-children provision that funneled federal funds to underwrite the costs of state-operated mothers’ pensions. The spread of mothers’ pensions after 1918 increased the number of mothers who remained at home to care for their preschool children and decreased the need for day-care nurseries. Still more day-care nurseries were threatened with extinction as public school systems began adding kindergartens to their elementary school programs.

In the meantime, however, the two aforementioned nursery schools in Chicago and New York had been founded, and when the American Association of University Women’s study trumpeted the beneficial effects of education on preschool-aged children, hundreds of day-care nurseries converted into nursery schools, hiring trained teachers to educate rather than simply act as custodians for their three- and four-year-olds. By 1930, there were about 300 such nursery schools nationwide providing students with constructive play, lessons in socialization and formal education. The latter included organized story telling, singing, exploration of nature, experiments with the fine arts and exposure to the basic

concepts of reading, writing and calculating to prepare them for entry into elementary school.

From custodial institutions, nursery schools were soon transformed into critical educational institutions. Unfortunately, none operated as elements of the public school system, thus depriving children of the poor of what by now had been deemed essential early education. In 1933, however, the Federal Emergency Relief Administration (FERA) included assistance to nursery schools for “young children of preschool age in the homes of needy and unemployed parents” to assure the availability of such education to the poor. Although the federal government had no constitutional prerogative to involve itself in public education, FERA had been created by Congress to provide jobs for the unemployed, and the aid to nursery schools was couched as a program to create jobs for unemployed teachers. FERA immediately began building nursery schools, buying appropriate equipment and hiring and training personnel. By 1937, it was operating 1,472 nursery schools across the United States. Some operated as part of local public school systems, others as laboratory schools in colleges and teacher training schools, and some as elements of local charitable and community agencies.

In 1941, FERA and other Depression-era aid programs were phased out in favor of defense-related preparations for World War II. Congress, however, passed the LANHAM COMMUNITY FACILITIES ACT to assure continued support of FERA nursery schools to care for children of mothers who were needed to replace men in defense plants and other jobs essential to the war effort. By the end of World War II in 1945, about 1.5 million children had passed through the 2,800 nursery schools then operating with federal assistance. In 1946, however, Lanham Act funds were withdrawn. Most of the federally funded nursery schools closed, and nursery school education was relegated to the private

sector. It was not until 1965 that the poor were once again afforded the opportunity of preschool education, through Operation HEAD START, a program created by the OFFICE OF ECONOMIC OPPORTUNITY as part of the federal government’s broader WAR ON POVERTY. At the time, wealthy American families were routinely sending their children to private nursery schools, aware of the findings by leading child-development researchers that the first five years of life were a “critical period” in human intellectual development. Studies had proved the effectiveness of “early learning” and that the intellectual enrichment strategies and activities that middle-class parents adopted routinely were usually unavailable to poor children.

As a result, over the next three decades—in about 1,400 nursery schools across the United States—Head Start provided health care, psychological and social services and preschool education to about 20 million children from families below the poverty level. By the end of the 20th century, about 40% of American three-year-olds and about 70% of four-year-olds were enrolled in nursery schools, compared to only about 5% and 16%, respectively, in 1965, before Head Start got under way. About half the three- and four-year-olds attended publicly operated nursery schools in 2000, compared to only 12% in 1965. As in conventional nursery schools, children in Head Start are exposed to a wide variety of educational materials designed to make them “school-ready,” including books, music, art and blocks. Their typical day includes organized play, singing, listening to stories, problem solving, developing social skills, developing enough coordination to dress themselves, free time and rest. Recognizing the advantages of preschool education, every state but sparsely settled Wyoming had established preschools by 2005.

(See also READINESS SKILLS; READINESS TESTS; TESTING PRESCHOOLERS.)

nursing The care and treatment of the sick—until the years following World War II, one of the few “professions” (along with teaching) open to women. Virtually barred from medical schools, women interested in careers in health care were forced to enter through “the back door,” so to speak, by training as apprentices to male doctors. By 1920, however, many hospitals had established formal, in-hospital training programs for nurses at the secondary school level. In effect, the programs taught nothing more than the basic hygienic care of the patient’s body and surroundings—bathing, changing sheets and so on—with some training in changing dressings of uncomplicated wounds. As medical technology expanded so did nursing duties, along with the number of hospitals. By the end of World War II nursing education had moved into the post-secondary school level. In the decades that followed, nursing grew increasingly specialized, and nursing education evolved into various mixes of secondary school, community college and university undergraduate and graduate training. Nursing today is generally divided into three broad categories: the registered nurse (RN), licensed practical nurse (LPN) and health-care aides (nursing aides, orderlies and attendants).

Growing pressure from the medical community to require RNs to have four-year bachelor’s degrees encouraged nearly 700 colleges and universities to offer such programs. Although most states still require only two years of community college training, both the four-year and two-year programs qualify graduates for entry-level positions as hospital staff nurses to administer routine medical care. Graduate programs offer master’s degrees and doctorates in nursing and hospital management and administration, plus various specialties such as industrial nursing, community health and nursing education. Training as an LPN, whose duties are limited to nonmedical patient care, such as bathing and bed changes,

is generally offered in two-year programs in secondary schools, community colleges and hospitals. One-year training programs for nursing aides and other health-care aides are also available in secondary schools, community colleges and hospitals.

nutrition In education, the proper feeding and nourishment of children and adolescents. The vast majority of school-aged American children report having diets high in fats and sugar, while an estimated 10 million American children, or nearly 16% of the population under 18 years old, suffer from malnutrition. Because the vast majority live in dysfunctional homes and in families living below the poverty level, Congress passed the National School Lunch Act in 1946 to guarantee lunch for every American child in school. Although all public schools must provide students with lunch, they do not necessarily have to participate in the NATIONAL SCHOOL LUNCH PROGRAM. Schools that do participate are required to provide lunches that meet specific federal government nutritional requirements, including a half-pint of milk; two ounces of lean meat, poultry, fish or alternative food; vegetables and fruit; bread and one teaspoon of butter or margarine. Costs of the program are defrayed to some extent by state aid and fees charged to parents who can afford them, but the vast majority of the cost is financed by about \$10 billion a year in federal funds.

In 1966, the School Lunch Program was expanded with passage of the CHILD NUTRITION ACT to provide breakfasts for economically deprived children who might not otherwise obtain enough food at home before they left for school. Twice amended in the 1970s, the Child Nutrition Act also provided funds to encourage milk consumption by children in nonprofit schools, child-care centers, nursery schools, settlement houses, summer camps and similar nonprofit institutions.

Oberlin College A private, nondenominational institution founded in 1833 as the first coeducational college in the United States. Two years later, it also became the first American college to admit blacks, and it remained a center for antislavery activities throughout the period leading up to the Civil War. Originally an academy named the Oneida Institute, after the Indian tribe, it became the Oberlin Collegiate Institute after a group of abolitionist students and their teachers transferred from Lane Theological Seminary in Cincinnati following bitter confrontations with proslavery trustees. The Oberlin name was that of Friedrich Oberlin (1740–1826), an Alsatian Lutheran pastor whose gentle morality inspired the college’s founders. Although ostensibly coeducational, women students were not permitted in the same lecture halls as men, and their papers could be read only by men.

The arrival of CHARLES GRANDISON FINNEY as professor of theology in 1835 began the transformation of the college into a center of modern revivalism. Taking over the college presidency in 1851, Finney developed the evangelical doctrine of “Oberlin Perfectionism,” or Oberlin Theology, which became the basis for modern evangelism. Educated as a lawyer, he had experienced a “conversion” from which he emerged believing that Christ’s death had removed the burden of sin from every newborn. His declaration of a “universal amnesty” electrified the

nation, bringing Americans from every corner of the nation to hear him. Traditional Protestant churchmen, almost all firm believers in the doctrine of original sin, were outraged. But Finney’s revival meetings won him worldwide fame, and his desire to found a new form of Christianity based on revivalism brought him to Oberlin to found its department of theology. As professor and president, he established teaching methods and curricula that set standards for the dozens of evangelistic theological colleges that would spring up during the remainder of the 19th century. Finney served as president until 1866 and converted Oberlin into a major training school of evangelistic missionaries who flooded the South after the Civil War to convert and educate former black slaves. With the founding of the STUDENT VOLUNTEER MOVEMENT FOR FOREIGN MISSIONS in 1888, Oberlin became a primary source of young SVM missionaries in Asia and Africa.

As the missionary movement went into decline following World War I, Oberlin responded to the needs and demands of a new generation of students and evolved into the secular coeducational college it is today. With about 2,800 students, it has achieved renown for its Conservatory of Music, which awards bachelor’s degrees in music and master’s degrees in conducting, music education, opera, theater, performance on historical instruments, and teaching.

objective test An examination in which scoring is independent of examiner discretion. There are two basic types of objective test: constructed-response and selected-response. Questions in constructed-response tests require short, written answers from recall, while selected response test questions offer a choice of answers to each question (true-false, multiple choice, etc.) from which the test-taker must select the correct one. Proponents of objective testing point to the ease and speed with which such tests can be corrected, thus reducing costs of administration and providing students with rapid reports on their grades. Critics of objective tests say they reward memory and do little to enhance student problem-solving and reasoning skills.

observational techniques Any of a variety of procedures by third-person, objective observers for evaluating student and teacher performances and student-teacher and student-to-student interactions. A variety of methods for observing are available, including videocameras, tape recorders, one-way mirrors and written notes. Assessments are then made according to what behavior is being measured and what evaluation scheme is being used. Thus, student language skills might be measured by determining mean sentence length. Teacher performance is usually measured by complex programs such as the Flanders Interaction Analysis (FIA), which records selected classroom events at three-second intervals and then determines the number of those events that fit into each of 10 categories. Seven of the 10 are teacher-initiated events ("asks questions," "praises or encourages," etc.), two are student-initiated ("pupil talk response") and one category is silence.

Odyssey: A Curriculum for Thinking An educational approach that combines exercises in problem solving and reasoning with direct

instruction. Developed at Harvard University's School of Education in 1984, the six-year program is designed for ELEMENTARY SCHOOL students, beginning in grade four, and MIDDLE SCHOOL students. Made up of about 100 lessons presented in a specific order, the program has six teacher manuals and six student manuals, each for a particular grade in school. The thrust of the program is to teach higher-order intellectual skills that will carry over into high school and college.

Odyssey of the Mind Program A once popular extracurricular activity for gifted students, who formed teams to compete in intramural and interscholastic, academic competitions. Originally called Olympics of the Mind when founded in 1987, the not-for-profit Odyssey of the Mind attracted more than 140,000 teams from thousands of schools in 48 states and 22 countries to compete. Competitions were held in four divisions, based on age groups, from kindergarten through college. Made up of students exhibiting a variety of skills and knowledge and coached by teachers from their own schools, each team had to work cooperatively to solve one of five complex problems—building a vehicle powered by elastic materials, for example, or restaging a Shakespeare classic in a different time period. Solutions had to be presented in eight minutes. Despite its popularity, the competition fell victim to internal disputes and a series of suits and countersuits by its managers, some of whom set up competitive programs.

off-campus academic alliance Any academic program involving instruction and educative experiences regularly provided by sources off the elementary school, high school or college campus. The range and number of such alliances is enormous. At their simplest level, they include instructional programs for ELEMENTARY SCHOOL classes offered by museums, pub-

lic service organizations, police and fire departments, business leaders, college professors, writers, artists, singers, musicians and a host of other professionals. Many of these alliances are maintained with middle schools and high schools as well. At the secondary school level, they include formal ties between high schools and nearby colleges, universities and corporations that provide supplementary academic or vocational instruction for high school students. The U.S. DEPARTMENT OF EDUCATION estimates that American businesses sponsor more than 60,000 school-support projects, ranging from gifts of technologically advanced equipment to career development programs in which company employees serve as mentors to students in science, mathematics and other subjects. Many companies establish alliances with vocational schools, whereby students attend classes in the morning, then report to work, where they put their classroom instruction to practical use under the tutelage and supervision of a company instructor—often, with the promise of employment upon graduation. Similarly, community colleges have formal “TWO-PLUS-TWO” vocational education programs that begin in junior year of high school and continue for four years, ending with graduation and an associate degree from the community college.

In the academic sector, many colleges and universities operate academic programs for gifted high school students who have completed their secondary school studies in a particular subject and want to progress to advanced, college-level studies in that subject while continuing their high school studies in the rest of the curriculum. Another major off-campus alliance is the college cooperative education program, available at about 1,000 public and private two-year and four-year colleges and universities. Dozens of major corporations are allied in the effort, which integrates daily college classroom studies with part-time paying

jobs at participating companies. Some programs are arranged so that students alternate three-month periods of full-time classroom studies with three-month periods of full-time employment. Students who do well in such programs are generally offered permanent employment by participating companies.

Office for Civil Rights One of a number of federal government agencies responsible for enforcing laws and court decisions banning discrimination on the basis of race, religion, gender, national origin or physical or mental handicaps. There are at least 10 such agencies, each focused on civil rights enforcement within a specific area, such as transportation, housing and education. The Department of Education Office for Civil Rights enforces policies prohibiting discrimination in all local, state, regional and national programs and activities receiving financial assistance from the department.

Office of Economic Opportunity A federal agency established by the ECONOMIC OPPORTUNITY ACT OF 1964 to plan and coordinate programs to eliminate poverty in the United States. An element of President Lyndon B. Johnson’s WAR ON POVERTY, the agency was responsible for establishing such programs as HEAD START and the NATIONAL YOUTH CORPS. The agency was disbanded in 1973, with most of its programs absorbed by other federal agencies.

Office of Educational Research and Improvement A U.S. Department of Education division with five areas of responsibility:

- Information Services, including the huge EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC), which provides a virtually limitless source of on-line data about education;
- Library Programs, which provide development and support services for public libraries;
- Programs for the Improvement of Practice, which operates regional education laboratories and

school recognition programs offering awards for excellence in education;

- Office of Research, which oversees the National Institute of Education and its 14 research centers in basic and applied educational research; and
- Center for Statistics, which oversees the collection and publication of statistics on all aspects of American education.

Office of Indian Affairs (OIA) A federal agency established by the Indian Act of 1834 to regulate trade with American Indian tribes west of the Mississippi River. Under the Removal Act of 1830, American Indians living east of the Mississippi were forcibly removed and exiled to the west in an effort to free lands throughout the south for white settlers, miners and agricultural interests. The bureau was initially charged with regulating trade with the exiled tribes to protect them from fraud by white traders. Over the ensuing decades, OIA agents gradually assumed and usurped increased powers over other aspects of Indian life.

The thrust of all federal government and Office of Indian Affairs policies was that Indians could eventually be coaxed into abandoning traditional tribal customs and assimilating into white, Protestant America. To that end, missionaries from a variety of eastern Protestant organizations swarmed across Indian lands to convert adults while establishing schools to educate and proselytize Indian children—all under the protection and support of OIA. Although absorbed into the Department of the Interior in 1849, OIA remained relatively autonomous, and it assumed official control of formal education in every area under its control. Acting under the assumption that white, Protestant culture was superior to tribal culture, OIA routinely forced Indian children to attend government- or church-run boarding schools, often far from the “detrimental” influences of their home reservations.

The Indian Reorganization Act of 1934 attempted to rein in runaway OIA powers by renaming it the Bureau of Indian Affairs and placing it under direct supervision of the secretary of interior. Concerns with the Great Depression and the exigencies of World War II left it relatively autonomous. Nevertheless, the Reorganization Act had called for terminating federal responsibilities for Indian affairs. By 1970, Indian protests demanding autonomy and termination produced congressional resolutions that turned administration of federal Indian programs, including education, to the Indians themselves. The bureau was reduced to a relatively impotent liaison and data collection office.

Ogden, Robert Curtis (1836–1913) Business leader and organizer of the Southern Education Board, which promoted establishment of universal public education in the American South. Born and educated in Philadelphia, he moved to New York with his family and became a junior partner in his father’s dry goods firm. After serving with Union forces in the Civil War, he went to work for John Wanamaker, a prominent Philadelphia men’s tailor and founder of one of the first U.S. department stores. In 1896, Wanamaker sent Ogden to open and manage a branch store in New York City, which quickly became one of the largest department stores in the United States.

Much earlier, however, Ogden had been on a sales trip in the South, where he met and formed a deep, lifelong friendship with SAMUEL CHAPMAN ARMSTRONG, who founded HAMPTON INSTITUTE in Virginia to help educate freed slaves. Armstrong imbued Ogden with a deep interest in the South. Returning north, he began “educating” northern progressives to the educational problems (and economic potential) of the South, which was mired in poverty, illiteracy and economic decay. The few schools in existence were private academies reserved for the wealthy elite. In 1901, Ogden organized

the SOUTHERN EDUCATION BOARD and convinced the likes of JOHN D. ROCKEFELLER, Sr., publisher Frank Nelson Doubleday, financier-philanthropist George Foster Peabody and others to join. Financed by Ogden's own funds, as well as grants from his fellow board members and from Rockefeller's educational foundation, the GENERAL EDUCATION BOARD, the Southern Education Board campaigned throughout the South for establishment of public schools. By 1912, it had successfully lobbied the state legislatures in North Carolina, Kentucky, Tennessee and Georgia to establish free, tax-supported and public—albeit, racially segregated—school systems.

Ohio The 17th state to enter the Union, in 1803. In 1825, the state passed a law requiring counties to raise taxes to finance public elementary schools. In 1850, the state established its first public high schools. Ohio has more than 3,900 public elementary and secondary schools, with a total enrollment of more than 1.8 million—20% of them minority students and nearly 15% living in poverty. Nonetheless, their academic achievement ranks among the highest in the nation; they consistently finish among the top 15 states in reading and mathematics proficiency. The state has 25 public four-year institutions of higher education and 36 public two-year colleges. Ohio State University and Ohio University form the core of the system, which is decentralized, with each governed by its own board. There are 76 private four-year colleges and universities and 52 two-year private colleges. Among the state's many well known private institutions are ANTIOCH, OBERLIN and Kenyon Colleges, the College of Wooster, Carnegie Mellon University and Case Western Reserve. The graduation rate at four-year colleges is 53.9%.

Oklahoma The 46th state admitted to the Union, in 1907. A sparsely populated state, Oklahoma had few schools—almost all started

by missionaries—prior to statehood. The state constitution of 1907 supported establishment of a public school system, but public opposition kept educational spending to a minimum. By the early 1990s, Oklahoma high school graduates functioned at so low an academic level that the state's growing industrial sector was forced to import skilled workers from other states. As local unemployment and poverty spread, the state went on an educational spending spree, raising teacher salaries and increasing academic standards somewhat. In 2005, academic proficiency remained well below average for the nation, and all age groups ranked among the 15 lowest-achieving states. The state now has more than 1,800 public elementary and secondary schools, with a total enrollment of more than 600,000—18% of whom live in poverty. More than 36% are minority students: 17.5% are American Indian, 11% black and 6.5% Hispanic. The state has 15 public and 20 private four-year colleges and universities and 14 public and seven private two-year schools. The graduation rate for the more than 130,000 undergraduates at four-year colleges is only 41%.

one-room schoolhouse The traditional frame building that housed most rural 18th- and 19th-century schools in the American colonies and states. Usually portrayed by Hollywood films as a warm, comfortable haven supervised by a loving, understanding matron, the one-room schoolhouse of the 18th and 19th centuries was more often than not a dilapidated, unheated structure where it was not uncommon for sadistic, untrained and often ignorant teachers to flog children until they bled. Until the advent of the state-controlled public school systems of the late 19th century, "common" or public schooling was usually a local option—more often than not held in the church under the tutelage of the local minister but reserved for parishioners who could pay for such education.



Corporal punishment and humiliation were the basic teaching methods in the one-room schoolhouse. The student at rear stands in isolation, wearing a “dunce” cap, in this school, which is relatively luxurious in that it was heated and its windows were sealed to keep out the wind, rain and snow. Teachers used whips and birch branches to punish students. (*Library of Congress*)

The more secular, freestanding one-room schoolhouses evolved in farm communities to keep idle boys busy during the eight to twelve weeks in winter between the end of the last harvest and the first spring planting and only occasionally during idle days of midsummer heat waves. Children were essential farm labor, and school seldom lasted past the first spring thaw.

As often as not, the building relegated to such temporary service was an unused, unheated outbuilding, with open windows that allowed snow and rain to storm through the room. When red, as in most Hollywood films, the color was the result of the application of red

ocher, an inexpensive wood preservative made of a clay emulsion. There was no running water or toilet, which were considered costly luxuries. Inside, boys of all ages crowded in a single room. Barbaric behavior was the rule, and only men (and penniless college students) desperate for funds dared teach. Most knew little more than their charges, and those who were not driven out (students stoned one female teacher to death in Massachusetts) quit in disgust. Even the young HENRY BARNARD, the great educator and founder of various state public school systems, quit after trying to teach. Teachers who managed to bring some order to the chaos did so with whips, birch rods and other instruments.

Unlike Hollywood portrayals, the one-room schoolhouse was no place for women, who constituted only about 10% of the teachers in such institutions before the Civil War. Instruction was inadequate and inefficient, with one teacher in charge of 40 to 60 boys (and only rarely some girls), who were usually grouped informally by age or ability level and according to the subject each was studying. Thus, depending on each child’s previous education, a group studying beginning arithmetic might include children ranging in age from six to 12—a situation that often provoked bullying and fighting. On the other hand, such groups could also be centers for considerable peer instruction. The teacher tried to keep each group busy at all times with new learning projects.

Occasionally, the teacher engaged the entire student group in singing, spelling words in unison or reciting multiplication tables. At other times, the teacher would call on a specific group of students to stand and recite together what they had learned for the benefit of the rest of the class. But depending on teacher skills and ability to control the class, one-room schoolhouses were often scenes of chaos and anarchy that spawned the prevalent 19th-century tradition of “turning out the teacher.” Indeed, on October 8, 1870, four boys at the public school

in Canton, Massachusetts, stoned to death their teacher, Miss Barstow, after she reprimanded them for unruly conduct in class. As increases in the student population necessitated segregation of students by age groups into grades, the one-room schoolhouse began to disappear. With the advent of motorized transportation and the administrative and financial economies of centralized education, the one-room schoolhouse all but disappeared from the American scene, although in the 1990s several dozen still survived in isolated rural communities.

online education The administration of high-school, college and other courses over the INTERNET. By 2007, 38 states had established so-called virtual schools offering online courses to about 500,000 students in about 36% of American public school districts. Among the largest schools are the state-run Florida Virtual School, the Idaho Digital Learning Academy, the Massachusetts Virtual High School and the Ohio eCommunity Schools. Some online learning programs, such as the Michigan Virtual University, are run by nonprofit organizations, while California's online schools are under the aegis of the University of California, Santa Cruz. About 20% of the more than 1 million students enrolled in HOME SCHOOLING take one or more online courses. In 2003, Western Governors University, a Salt Lake City-based nonprofit institution, became the first online university to offer an online teacher training program leading to degrees and certification. Accredited by the National Council of Teacher Education, the program is backed by grants from the U.S. Department of Education and enrolls students in and meets licensing requirements of all states.

(See also DISTANCE LEARNING, TEACHER EDUCATION.)

opaque projector A device that projects images of opaque objects, such as printed pages

from a book, on a screen. Only 20% as bright as conventional slide projectors, they date back to the era of oil and gas lamps and remain a relatively inexpensive audiovisual device requiring no investment in transparencies or other special projection materials.

open admissions A policy (often called open enrollment) that admits applicants to a school, college or university on a first-come first-served basis, regardless of the student's previous academic performance, financial status or other traditional requirements for admission. However, most four-year colleges and universities with open admissions policies do require successful graduation from high school for admission. Long a tradition of community colleges, whose role is to serve the community at large, open admissions policies were adopted by many comprehensive state university systems after World War II, when the G.I. BILL OF RIGHTS first popularized higher education. The University of California drew up educational master plans for open enrollment in 1948 and 1955, creating a three-tier system of higher education. The lowest tier of junior or community colleges, with responsibility for technical curricula and job training, admitted all graduates of accredited California high schools. The state colleges offered liberal arts degrees and advanced occupational training in fields requiring a four-year degree and were open to all California high school graduates finishing in the top one-third of their classes. And the University of California was automatically open to all California high school graduates finishing in the top 12.5% of their classes.

Protests in the 1950s and 1960s by civil rights activists and students forced public colleges and universities to rethink their multi-tier, open enrollment policies. In 1970, the CITY UNIVERSITY OF NEW YORK expanded open enrollment policies to all 10 of its four-year colleges as well as its seven community colleges. For several

years, minority protesters and civil rights activists had demanded that City University compensate young people from the poorest socioeconomic groups for perceived educational injustices that left many New York City high school graduates only semiliterate and doomed to lives of unemployment. The community at large, the reasoning went, had been responsible for low-quality education of public schools in low socioeconomic neighborhoods by refusing to fund such schools adequately. By then restricting admission to public colleges to the academically qualified, the community was, in effect, restricting free, public higher education to predominantly white, middle-class students from better quality neighborhood schools.

City University responded by abandoning its two-tier arrangement and adopting open enrollment at its four-year as well as two-year institutions, thereby guaranteeing all graduates of New York City high schools and two-year colleges the right to admission to the four-year colleges. In an effort to ensure equality of educational outcome as well as educational access, the university attempted to compensate academically deprived students with remediation programs, special education, supportive counseling and other special programs. It also redesigned its curriculum to include less demanding courses and courses of special interest to minority students. After an enthusiastic enrollment rush and some initial successes, the program foundered. Dropout rates soared; graduation rates fell to 22%; and academic quality declined to one of the lowest levels in American higher education. Like midwestern universities with open enrollment, City University became a revolving door for inadequately prepared students.

By the beginning of the 2000s, the university reversed course and returned to a two-tier system, still guaranteeing entry to every high school graduate to at least a community college, but raising academic requirements for admission to its four-year colleges and denying

entry to the four-year colleges to students who required remedial work or were otherwise academically unqualified. It abandoned affirmative-action programs that gave unqualified students from minority groups preference over better qualified white applicants. Along with the abandonment of open enrollment came the recognition by city educators that colleges and universities were incapable of playing a major role in compensatory education of the socioeconomically deprived. With that recognition, leaders in higher education placed responsibility for compensatory education back in the hands of elementary and secondary public school systems, which subsequently began undertaking reforms of education in their domains.

open education A concept of preschool and kindergarten education conducted in an "open classroom," or large teaching area, two or more times larger than traditional classrooms. Devoid of permanent partitions, open classrooms are divided into a wide variety of teaching areas that students can access at will, according to individual interests, needs and motivation. Based on the concept of the BRITISH INFANT SCHOOL, the open classroom groups students of different but compatible ages and abilities in one huge space, but it permits them to disperse individually or in small groups to pursue their own learning projects independently or with teacher guidance. Thus, a large number of learning experiences take place simultaneously. The emphasis is on warm, open teacher-student relationships, self-directed learning and experimentation and learning at one's own pace in a noncompetitive, nonthreatening environment. The open classroom does away with regimentation and permits an integrated day, during which learning activities are dictated by student needs, interests and motivation rather than by prescribed time allotments. Introduced in privately operated preschools

and kindergartens during the 1930s and 1940s, the open classroom approach to early, pre-school education became somewhat standardized in the United States in the 1960s.

open school night (open school week) A usually annual occasion when parents are invited to their children's elementary and secondary schools to visit with their children's teachers and school administrators and hear them explain their educational goals, school policies and the teaching methods, materials and expectations in each class and subject. Normally teachers and administrators make their presentations in group sessions, after which parents meet individually for a few minutes with each of their children's teachers to obtain a brief (and often superficial) summary of their children's progress. Open school nights are not designed for in-depth parent-teacher discussions of profound student problems. In schools with relatively small enrollments, open school exercises can usually be held during a single evening; for the larger schools, the meetings are stretched out over an entire week, with each parent assigned one particular evening.

open university A concept of nontraditional higher education that combines a variety of pedagogical approaches, including educational radio and television, correspondence courses and traditional pedagogy to provide education to adults unable to attend traditional institutions of higher education. Developed in Britain after World War II, the first formal Open University of the United Kingdom enrolled its first students in 1971. The concept subsequently spread to more than 30 other countries, including the United States, where in the late 1990s the expansion of the Internet permitted more than 2,000 institutions of higher learning to establish DISTANCE-LEARNING programs, which, in effect, transformed them into open universities.

(See also PHOENIX UNIVERSITY.)

opportunity class A special class for students experiencing temporary, relatively mild behavior problems that have proved disruptive in their regular classrooms. Usually held in conjunction with special counseling and tutoring, opportunity classes represent an intermediate approach to coping with behavior problems—midway between permitting incessant disruptions in the regular classroom and exiling a student to INTERMEDIATE (or special) SCHOOLS for chronic behavior disorders. Although successful with some students, opportunity classes often represent a public humiliation that can exacerbate the problems of some students.

oral history A technique using written notes or tape and video recorders to record history as related by witnesses and other persons with in-depth knowledge of historical events and developments. Developed in 1948 at Columbia University by American historian Allan Nevins, oral history has become a standard tool of historians around the world.

oral reading A standard exercise and pedagogical technique in elementary (and some middle) school reading classes. By reading aloud to the class, the student allows the teacher to evaluate the student's reading skills and identify such reading deficiencies as word or syllable omissions, insertions of nonexistent words or syllables, mispronunciations and inversions and reversals (for example, "b" for "d," "pat" for "tap"). Some reading difficulties often signal learning disabilities requiring special education.

Oregon The 33rd state admitted to the Union, in 1859. A pioneer in public education in the West, the state opened its first public school in 1851—eight years before statehood and only two years after its establishment as a territory. The state was one of the first to institute follow-up surveys of its vocational high school graduates every three years to measure the quality and

long-term effects of such schooling. The state has about 1,270 public elementary and secondary schools, with an enrollment of more than 550,000 and a level of academic standards and student achievement that ranks about average for the nation. About 21% of the state's school-children are minorities, and nearly 14% lived in poverty. The state has a unique system of career tracks, similar to those in Europe and Japan, with tenth graders required to take tests that measure basic academic skills and then decide whether to pursue a college-preparatory curriculum or a four-year, "TWO-PLUS-TWO" career-oriented program tied to local community colleges.

Oregon has 9 public four-year institutions and 17 two-year colleges. It has 29 private four-year colleges and universities, among the most notable of which are Reed College and Lewis and Clark College. There are four private two-year colleges. Graduation rates at four-year colleges average 52.4%.

Orff Method A method of beginning music and instrumental instruction based on paralleling the evolution of music itself at the beginning of history, that is, by studying the development of rhythm, followed by development of melody, followed by development of harmony. Invented by German composer and music educator Carl Orff, initial instruction consists of clapping, echo clapping, patting the knees, foot tapping, finger snapping, chanting and other body movements that allow children to experience and thus learn rhythm. Children are then introduced to instruments, which they learn to play in unison to allow them to hear their own errors. Widely used throughout the United States, the technique is designed to use young children's instinctive musicality to speed them through the elemental (and usually, for them, the most boring) aspects of music instruction.

organization In education, the arrangement of the members of a school and school district,

including students, faculty, administration and staff, and the determination of their functions, goals and interrelationships. Many organizational terms are confusing because of their multiple meanings in and out of the educational establishment. In most school districts, for example, the term "organizational plan" usually refers exclusively to the vertical grade patterns in the elementary, middle and high schools of the district. In the Six-Two-Four (6-2-4) Plan, elementary school encompasses grades one through six; middle school, grades seven and eight; and high school, grades nine through twelve.

Beyond that, there are the staff and faculty organizational plans at the school and district, usually depicted by an organizational, or line-and-staff, chart that graphically depicts functions and authority of each member of the faculty, staff and administration. Usually not depicted in such charts, however, are the organizational characteristics that can deeply affect the performance of organization members. Leadership, for example, may be autocratic or democratic and thus affect organizational climate and, in turn, the organization's ability to function efficiently and achieve its goals. Other factors that can affect the organizational climate are economic conditions, individual personalities and organizational structure.

Organizational structure and the degree to which it affects organizational climate are based on "organizational distance" and "organizational space." Organizational distance is the number of authority levels separating various tiers of employers. So-called tall organizations—the complex variety found in major cities, for example—usually impose a large number of authority levels, or organizational distance, between a teacher and the school superintendent.

Organizational space represents the physical, social or functional separation between members of the organization. Geographical

space, for example, can physically separate two departments by placing each in a separate building and making communication and coordination of activities more difficult. Functional and social (or status-based) space usually exist in schools that see one group of employees voluntarily segregate itself from another group (guidance counselors, for example, from English teachers; faculty from office workers; or principal and administrators from faculty).

In the early 1960s, researchers Andrew W. Halpin and Don B. Croft of the University of Chicago School of Education developed an "Organizational Climate Descriptive Questionnaire," which they administered to a national sample of elementary schools. Half the questions were designed to determine teacher perceptions of school-principal behavior and half to evaluate teacher perception of the behavior of other teachers. The results identified six distinct "climate types": open, autonomous, controlled, familiar, paternal and closed. There are no definitive studies proving that any specific climate type produces better academic results—only that certain individuals function better or worse in certain climates.

Orphan Asylum Society A pioneering institution founded in New York City in 1807 to provide instruction in reading, writing, arithmetic and the domestic arts to orphaned or abandoned children. At the time, New York City, like the rest of the United States, had no public schools, and most formal education was provided by churches. An increasing population of homeless children was growing up illiterate and unable to work. A group of churches joined together in what was the first ecumenical effort in the United States to create institutions to alleviate the effects of poverty and abandonment through several broad programs of education and rehabilitation. The Orphan Asylum Society was one of these institutions. It

established a shelter to provide orphans with a basic academic, practical and moral education "in a homelike atmosphere presided over by a pious and respectable man and his wife." A second similar organization, the NEW YORK SOCIETY FOR THE PREVENTION OF PAUPERISM, created a similar institution, the House of Refuge, for juvenile delinquents.

orthography The written or printed representation of the correct or standard spelling of the words and sounds of a language. The orthography of English is considered among the most difficult of any language for non-natives to learn. It has 26 letters and some 2,000 letter combinations representing a mere 44 sounds. Many nonnatives never master English orthography and, therefore, the ability to speak English correctly. English orthography has been reformed numerous times throughout history, with NOAH WEBSTER, a fervent advocate of American independence from England, having been responsible for the Americanization of English orthography in his *Compendious Dictionary of the English Language*, in 1806, and *American Dictionary of the English Language*, in 1828. Further American modifications of the English language occurred during World War II, when many words were shortened to phonetic spellings to permit swifter telegraphic transmission.

Orton, Samuel T. (1879–1948) American physician and pioneer in the identification of dyslexia as an eminently remedial, nonpsychiatric learning disability. Born in Ohio, the son of the Ohio State University president, Orton earned his medical degree at the University of Pennsylvania and pursued graduate studies in education, neurology, pathology and psychiatry, spending a year in Germany studying under the famed Dr. A. Alzheimer. By 1919, he had also gained some teaching experience at Clark and Harvard Universities and was offered the

chairmanship of the University of Iowa Medical School's Department of Psychiatry—and the task of building and directing a state psychopathic hospital. He also established a traveling mental health clinic, financed by the Rockefeller Foundation in New York, to carry mental health care to rural areas.

It was on his first trip with the itinerant mental health clinic in 1925 that he encountered his first dyslexic, a 14-year-old boy immortalized in scientific literature as "M.P." The boy's teacher described him as "quite bright, does well in arithmetic . . . a very nice chap, of a good family," with no psychiatric or behavioral problems.

"Then what IS the problem?" asked the puzzled clinician.

"That's what puzzles me," replied the boy's teacher. "We just haven't been able to teach him to read."

Orton studied M.P. intensively and sensitively for several weeks. And after identifying and studying 14 other, similar children, he wrote his landmark paper, "Word Blindness in School Children," which he delivered to the annual meeting of the American Neurological Association, in Washington, D.C., in 1925. He thus became the first scientist to identify dyslexia, which he named *strephosymbolia* (twisted symbols) to describe the dyslexic's perception of printed words. His study opened up a new era for retraining the learning disabled, most of whom had hitherto been perceived as "feeble-minded"—a term Orton himself had used in previous work.

Orton had a multiple career as neuropathologist, psychiatrist, aphasiologist, medical school professor, brain researcher and state mental hospital director. He gave this up in 1929 to move to New York, where he practiced psychiatry, treated language disability problems and taught at Columbia University's College of Physicians and Surgeons. Working with neurologists, speech pathologists and brain

anatomists, Orton embarked on a 10-year-long series of wide-ranging studies of learning disabilities. Comparative studies were made between normal and retarded readers to identify the normal, nonretarded, but learning disabled. Diagnostic and treatment procedures were developed and tested with large numbers of children and some adults with a variety of language problems, including reading, spelling and handwriting problems, poor auditory comprehension, improper speech development, stuttering and certain language disorders associated with brain injuries. Working with more than 2,000 patients in the course of his career, he laid the groundwork for future researchers to find the neurological basis of dyslexia. Orton also worked with trained teachers such as Anna Gillingham, who developed the ORTON-GILLINGHAM METHOD for "retraining" dyslexics to learn to read and write. His wife helped found the Orton Dyslexia Society, which has now grown into an organization with more than three dozen branches that have trained more than 10,000 special education teachers around the world.

Orton-Gillingham method An eight-step system for teaching learning-disabled students to read. Developed in the 1930s by mathematics teacher Anna Gillingham, whose mentor SAMUEL T. ORTON first identified *DYSLEXIA*, the method is designed for dyslexic children of average or above average intelligence. The method is multisensory, calling for students to use their sense of touch as well as their eyes, ears, tongue and voice. Thus, in the first step of the method, the student hears, sees, speaks and feels each letter by physically tracing it with a finger. Eventually, letters are combined to form sounds, and the sounds are then combined to form words. Based on constant drilling and repetition, the method culminates with a final step, or linkage, in which the student writes a sound or word after the teacher has sounded it.

The Academy of Orton-Gillingham Practitioners and Educators trains and certifies teachers in the Orton-Gillingham method.

Otis-Lennon School Ability Tests A group intelligence test developed in 1936 by psychologist Arthur Otis (1886–1964) and made up of short, objective questions to permit quick administration and scoring. Revised in 1954, it was based on many principles of the Stanford Binet Scale of Intelligence and has replaced the STANFORD-BINET INTELLIGENCE TEST as the standard intelligence test for schoolchildren in much of the United States. Originally called the Quick Scoring Mental Ability Test, it consisted of three batteries: the Alpha, for grades 1–4; Beta, for grades 4–9; and Gamma, for grades 9–13.

outcome-based education A primary and secondary school curriculum that ties classroom work to problem-solving and higher order reasoning skills and requires student demonstration of minimum levels of competency in reading, writing, calculation and knowledge of history, civics and science to progress to higher grades and eventually graduate. A variation of COMPETENCY-BASED EDUCATION in effect in 40 of the 50 states, outcome-based education differs in that the educational goals, or “outcomes,” set by teachers are measured by devices in addition to the conventional, standardized tests that have been almost the sole evaluative vehicles for American public schools. Under outcome-based education, public schools add broader evaluative vehicles long in use in selective private schools and academically demanding public schools, and based on the totality, or “portfolio,” of a student’s work, as demonstrated in essays, notebooks and other original, creative work, as well as traditional tests.

Portfolio evaluation has long been standard in academically demanding schools. Most

public schools, however, abandoned the approach in the 1960s because of fierce teacher and student opposition to out-of-class writing requirements. Teachers objected to the long, unpaid hours at home correcting such work, while financially needy students who worked after school either had no time or were too tired to do homework. The result was that by the end of the 20th century less than half the public school students in the United States were given any writing assignments. Indeed, the average public school student in the United States was assigned only 5.4 hours of homework a week, compared with 10.7 hours for students in independent private schools. Some 60% of public school students spent less than 30 minutes on homework each day, and 18% did none. Only about 24% of nine-year-olds, 45% of 13-year-olds and 64% of 17-year-olds reported having to write an essay or theme during any given week of the school year. Only 38% of nine-year-olds, 34% of 13-year-olds and 28% of 17-year-olds wrote a book report. Consequently, the writing proficiency of the average public school student, measured on a scale of 0 to 500 by the NATIONAL ASSESSMENT OF EDUCATION PROGRESS, became inadequate—only barely literate—with nine-year-olds scoring an average of 207, 13-year-olds scoring 264 and 17-year-olds scoring 283. A core of 200 was defined as a “basic” ability “to understand, combine ideas, and make inferences on short uncomplicated passages about specific or sequentially related information.” Reading proficiency was only slightly higher, with nine-year-olds scoring 209.2, 13-year-olds 256.8 and 17-year-olds 290.2, with 250 deemed an “intermediate” reading level. In 1994, Congress enacted the GOALS 2000 educational reform program to encourage states to raise academic standards of public schools. Although every state joined the reform movement, only Kentucky and Vermont adopted outcome-based education techniques to try to achieve education reform. Widespread

public opposition to the approach prevented its adoption in other states, however. Although the public at large recognized that average student achievement was too low and that schools were not giving students enough homework, the public feared that the portfolio approach, while requiring more writing and more homework, would yield student grades that were inherently subjective. Essays, said the critics, opened the door to teacher biases that objective testing eliminates. Still another criticism—largely from the religious right—was that essay writing would lead to freewheeling discussions of moral, religious and political ideas that many parents might find inappropriate in public schools.

Outcome-based education was first introduced in 1991 in Vermont on an experimental basis with fourth and eighth graders. The scheme had mixed results. Although student writing skills were judged “good” to “excellent,” much of that success was attributed to a decade-long emphasis on writing that preceded the introduction of outcome-based education. Students showed no improvement in mathematics achievement, however. Although 71% of fourth grade students and 88% of eighth grade students understood the nature of math problems presented, only 47% and 50%, respectively, knew the procedures to solve them and used effective strategies in doing so. However, only 12% and 20%, respectively, managed to arrive at correct solutions, and almost no fourth graders and only 4% of eighth graders were able to generalize from and relate the problems they solved to other problems in day-to-day life. Vermont nevertheless implemented outcome-based education in all grades in 1993. It consisted of an assessment program based on three elements: standardized tests in mathematics and writing required of all students; portfolios of work in each subject; and a “best piece” of work in each subject. The standardized tests consist of both multiple-choice

(objective) questions and open-ended problems from the National Assessment of Educational Progress given to students across the United States.

The first assessments of outcome-based education showed significant improvement in the academic achievement of motivated students from supportive and/or culturally advantaged homes. It did not go far in solving academic problems arising out of poverty, cultural deprivation, abuse and other social problems affecting modern public school education. In addition, outcome-based education did nothing to confront the problem of classroom disruptions. Federal law mandates all-inclusion policies requiring public schools to include many mentally, emotionally, intellectually and behaviorally handicapped students in conventional classrooms. Moreover, there is evidence to support critics who cite the imprecise nature and, indeed, the subjective nature of evaluating student work. Critics say the lack of a universal scoring method is at the heart of a growing trend by many teachers to replace traditional grades with broad and somewhat meaningless outcome-based evaluations such as “inadequate,” “basic,” “intermediate” and “adept.” In 1998, five years after Vermont had adopted outcome-based education and other states had adopted traditional competency-based education, student achievement in Vermont’s public schools remained no better than about average for the nation, as did that of Kentucky schoolchildren.

outdoor education A formal or informal curriculum enrichment to develop knowledge of ecology among elementary and secondary school students. Outdoor education usually consists of one-day or multi-day field trips that, depending on school location, take students to local parks or to wilderness areas. Such excursions have specific educational objectives, including instruction in the fauna, flora and

geology of the area and the interrelationships of all elements in the ecosystem. In addition, such trips may have a variety of nonacademic goals, including teaching students about environmental protection, helping them acquire an aesthetic appreciation of nature and the outdoors, helping them master camping and recreational skills, teaching them about safety, teaching them survival skills and teaching them to live together cooperatively and democratically. The ratio of academics to recreation in such programs varies widely from school to school and region to region. Some schools maintain summer camps to give students an extended program of outdoor education, coupled with a large component of recreation and sports.

out-of-school (educational) programs

Any of a wide variety of formal or informal educational programs operated independently of the school. Among organizations that operate such independent, out-of-school programs for students of all ages are MUSEUMS (instruction in art history and classes in drawing, painting, sculpting, photography and other arts); LIBRARIES (storytelling, films, lessons in reading and writing); zoos (tours, lectures, feeding, animal petting, picture-taking); private art, drama, music schools (formal lessons in drawing, painting, sculpting, acting, playing musical instruments and singing); theaters, opera companies, concert halls (special performances for children of different ages); sports leagues; clubs and organizations such as Brownies, Cub Scouts, GIRL SCOUTS, BOY SCOUTS, YOUNG MEN'S CHRISTIAN ASSOCIATIONS, YOUNG WOMEN'S CHRISTIAN ASSOCIATIONS, YOUNG MEN'S/YOUNG WOMEN'S HEBREW ASSOCIATIONS, Boys Clubs, Girls Clubs, 4-H CLUBS and individual churches, synagogues and other agencies (a variety of educative programs, including camping, training in the arts and crafts, training in gardening and animal husbandry, and the opportunity to learn a variety of sports).

outsourcing Contracting of on-campus services with independent, profit-making organizations unaffiliated with the educational institutions. Although not uncommon at the public primary and secondary school level, outsourcing is most prevalent in higher education, where academicians simply do not have the time or training to manage functions not associated with teaching and research as efficiently as private industry. Thus, most universities now outsource such services as construction, building maintenance, steam and power generation and groundskeeping. Private companies operate more than half the college bookstores in the United States, and many colleges have turned over operations of libraries and medical and health centers to outside companies. Still other colleges outsource all purchasing, and many have found it more efficient to outsource systems analysis, programming, datacenter operations and even their e-mail to software houses and service bureaus. With the development of DISTANCE LEARNING, colleges, academic departments and individual professors without adequate financial and technological resources to do the job themselves have turned to commercial firms such as The Learning House to develop and provide online courses. Carnegie Mellon University established a for-profit subsidiary called iCarnegie that sells online courses to other colleges for their distance learning programs, and the nonprofit Monterey Institute for Technology and Education in California has established a National Repository of Online Courses. A number of community colleges are setting up informal networks to buy and sell courses from each other. It costs about \$10,000 to \$20,000 to develop an on-line course, and colleges such as the Community College of Denver willingly offer the courses they develop to other colleges for one-time fees of \$1,000 for two-credit courses and \$1,500 for three-credit courses. Buyers can modify and customize the courses as they see fit.

(See also COURSE MANAGEMENT SOFTWARE.)

overhead projector An audiovisual device that projects images from transparencies onto a screen. Often called an “electronic chalkboard,” it is one of the most widely used CLASSROOM AUDIOVISUAL AIDS. It is lightweight and easy to use and allows projection of images in lighted rooms. It can accept both commercially produced or teacher-produced transparencies, and it allows the teacher to write directly on blank or prepared transparencies with a grease pencil or felt pen while the unit is on and projecting the teacher’s work.

Overlap An agreement developed in the late 1950s among the eight IVY LEAGUE colleges, MASSACHUSETTS INSTITUTE OF TECHNOLOGY and about two dozen other academically selective northeastern colleges to abandon merit scholarships and award such grants solely on the basis of financial need. A merit scholarship ignores financial need and awards student grants on the basis of how badly the college wants a student to attend—as in the case, for example, of an outstanding athlete, musician or scholar, whose presence will enhance the college’s prestige. To avoid competing with each other for the same students and thus artificially inflating the value of need-based scholarships, Overlap participants met each year to agree on a single award that all colleges who accepted the student would offer, without any variation.

The price-fixing conspiracy for scholarships went unchallenged until 1991, when the U.S. Department of Justice brought an antitrust action against the Ivy colleges and MIT for collusion in fixing tuition charges. The two dozen smaller colleges immediately withdrew from Overlap, and the Ivy colleges—Brown, Columbia, Cornell, Dartmouth, Harvard, Princeton, University of Pennsylvania and Yale—entered into a consent decree that terminated Overlap. MIT, however, contended it had not violated the law and that involvement in a competitive bidding war for scholarship students would not

only have threatened the health of the college’s finances, but would also have resulted in fewer scholarship dollars for other needy students.

In 1993, the Justice Department relented and worked out a settlement with the Ivy colleges and MIT, permitting them to participate in “cooperative financial aid arrangements” that prohibited the award of merit scholarships. The only restriction in the settlement forced them to admit all students on a “need-blind” basis, thus forcing them to consider and admit or reject all applicants without any knowledge of their financial needs. They must then, however, give each admitted applicant all the financial aid that the student needs, regardless of how much it may be.

overplacement The placement of a student in a class or grade with academic expectations beyond the student’s level of competence.

Owen, Robert (1771–1858) A wealthy English textile manufacturer and idealistic socialist reformer who, believing that universal public education would lead to social perfection, spent a fortune establishing utopian communities in Scotland, Britain and the United States. The father of the cooperative movement, Owenite ideas changed American thinking about education by popularizing the concept of universal public education.

Born in Wales, Owen was apprenticed to a draper’s shop at nine and by 18 had gained an extensive knowledge of textiles that he parlayed into the ownership of textile manufacturing machinery. In 1799, with philosopher/social reformer Jeremy Bentham (1748–1832) and others, he bought the textile mills in New Lanark, Scotland, a village of about 2,000. He quickly elevated the grimy little community to world fame by converting it into a socially progressive, model industrial community. The well compensated and motivated workers, in turn, made his enterprise one of the most profitable

in the United Kingdom. Determined to create a "new moral world," Owen not only operated his textile mills profitably, he also did so humanely. He eliminated child labor, significantly improved worker living and working conditions, and introduced the first sickness insurance and old-age pensions in Western industry. In 1816, he inaugurated an Institution for the Formation of Character, with a day-care center for infants and young children, an unheard of concept for that era. "By this means," he said, "many of you, mothers of families, will be enabled to earn better maintenance or support for your children."

The institution also included a classroom that taught reading, writing, arithmetic, sewing and knitting to children under 10, an evening school for older youngsters employed in the mill, a reading and recreation center for adults, and a variety of adult education and recreation programs, including dancing, music, nature study, vocational training and self-instruction. The formal educational facilities adopted the methods of Swiss educators JOHANN HEINRICH PESTALOZZI and PHILIPP EMANUEL VON FELLEBERG, who were the first European educators to use benevolence and affection instead of authoritarian brutality to teach children. They were also the first to offer education to children of all social and economic classes, girls as well as boys—again, unheard of educational concepts for an era that believed the lower classes to be uneducable and predestined by God to remain in their station of life. Such education, Owen wrote in his widely circulated book *A New View of Society* (1813), would "not only withdraw vice, poverty, and, in a great degree, misery from the world, but [would] also . . . place every individual under circumstances in which he shall enjoy more permanent happiness than can be given to any individual under their principles which have hitherto regulated society."

"I know," he later told the English Parliament, "that society may be formed so as to

exist without crime, without poverty, with health greatly improved, and with little, if any, misery, and with intelligence and happiness increased a hundred-fold; and no obstacle whatsoever intervenes at this moment, except ignorance, to prevent such a state of society from becoming universal."

In an 1817 report by the Parliamentary Committee on the Poor Law, he proposed reorganizing English industrial communities into planned utopian, self-supporting communities, each with about 500 to 1,500 people living in self-contained quadrangular compounds that would include family living quarters, children's dormitories, communal dining rooms, chapels and schools. Just beyond the perimeter would lie the stables, farms and factories that would support the people of each community. The Factory Act was emasculated by Parliament, which rejected the proposal for universal public education. Determined to transplant his idea elsewhere, Owen purchased 20,000 acres across the Atlantic in NEW HARMONY, Indiana, in 1825. Hundreds of would-be residents flocked to New Harmony with a variety of conflicting expectations. Some expected Owen to give them jobs; others thought he would simply support them; and still others, who were utopians themselves, thought they would have free rein to establish their own independent, experimental living communities at Owen's expense. An attempt at writing a constitution exposed these conflicts and disintegrated into chaos, and the community itself disintegrated two years later, after Owen returned to England.

The two years that New Harmony survived as an Owenite community, however, produced many innovations that had far-reaching influence on American education. For a brief moment, New Harmony was one of the great centers of educational innovation, scientific research and publishing in the United States. Owenite educators went on to contribute to the development of schools, libraries

and universities throughout Indiana and the West—everywhere pioneering Owenite methods for educating children and Owenite beliefs in equal rights for women. They launched a national debate on universal public education that eventually inspired education reformers such as HORACE MANN and HENRY BARNARD to found the first state public school systems in the United States and open education to women.

Owen returned to England to complete work on his book *New Moral World*, a complete outline of his beliefs. In 1833, he helped found the first British trade union. Although it failed almost immediately, it served as a model for the trade union movement later in the century. In 1844, he founded the international cooperative movement in Rochdale, England, organizing a group of 28 impoverished weavers into a mutual aid society called the Rochdale Society of Equitable Pioneers that eventually thrived and served as a model for cooperatives elsewhere. Owen's son, ROBERT DALE OWEN, remained in the United States, where, determined to realize the social ideals of his father, he eventually became a prominent political leader and social reformer.

Owen, Robert Dale (1801–1877) Social and educational reformer, U.S. congressman and creator of the legislation that established the SMITHSONIAN INSTITUTION as a teaching as well as research organization. Born in Scotland, he was educated in the schools of New Lanark, Scotland, the cooperative utopian community established by his father, ROBERT OWEN, a wealthy textile manufacturer and social reformer. In 1825, young Owen came to the United States with his father to help establish another cooperative utopian community, in NEW HARMONY, Indiana. After the community failed, he traveled to England, where he met and was deeply influenced by philoso-

pher/social reformer Jeremy Bentham (1748–1832).

Determined to realize the social ideals of his father, he returned to the United States in 1829, to New York, where he founded and edited the *Free Enquirer*, joined other social reformers as an active supporter of the growing labor movement and influenced the New York Working Men's Party to make universal public education its primary goal. In 1832, he returned to New Harmony, where he served three terms as a state legislator (from 1836 to 1838) and during which he was responsible for securing funds to start a state public school system.

In 1843, Indiana sent him to the U.S. House of Representatives for two terms, from 1843 to 1847, and there, in 1845, he introduced the legislation that created the Smithsonian Institution. His plan called for a museum, a library and other facilities to house the U.S. government's scientific collections. It also provided for the employment of scholars, whose research in science and agriculture was to be published "for the dissemination of information among the people." And, finally, to the consternation of opponents of public education, he provided not only for free instruction of students admitted to the institution, but also for the establishment of a training institute to "qualify young persons as teachers of common schools, and to give to others a knowledge of an improved common school system."

After retiring from public office, he returned to Indiana, where he lobbied for property rights for married women (at the time, women forfeited all their property to their husbands when they married) and for liberalized divorce laws. An ardent supporter of emancipation, he was appointed by the United States government to chair a committee in 1863 to investigate the condition of freedmen. After the Civil War, he spent most of the remainder of his life writing pamphlets on social and political questions.

Page, Walter Hines (1855–1918) American journalist, editor, publisher and vocal advocate for establishment of universal public education in the South. Born and educated in North Carolina, he became editor of the *St. Joseph* (Missouri) *Gazette* in 1880, literary editor of the *New York World* in 1882 and editor of the *North Carolina State Chronicle* in Raleigh from 1883 to 1885. During those years, he wrote prolifically about the South, gaining national and even international attention for his advocacy of a “New South,” with universal public education for both races, a long overdue deemphasis of the Civil War and a vast scheme to develop scientific agriculture and modern industry. In 1887, he returned to New York and the editorship of the influential *Forum*, which he used to continue his campaign to lift the South educationally and economically by drawing the attention of influential financial interests to investment in the area. In 1898, he became editor of the prestigious *Atlantic Monthly* and a founding partner in the publishing company Doubleday, Page & Co., with responsibility for editing *World’s Work*, a public affairs magazine.

A series of lectures and essays written between 1897 and 1902 attracted national attention, but bred considerable resentment in the South. Page argued that Christian evangelists had monopolized education in the South and limited access to an aristocratic elite, thus

leaving “the forgotten man”—both white and black—at the bottom of the social structure, in ignorance and poverty. He called for establishing public school systems with local taxes as “the only effective means to develop the forgotten man, and even more surely the only means to develop the forgotten woman.” The restoration of the South’s economy, he insisted, depended entirely on establishing public schools “to train . . . both the hands and the mind of every child.”

His words became known as the “gospel” of the SOUTHERN EDUCATION BOARD, an organization formed in 1901 by a group of leading educators and northern philosophers bent on conducting “a campaign of education for free schools for all the people” in the South. Flooding the region’s newspapers and periodicals with literature and conducting educational “revival” meetings, the board was responsible for influencing legislatures in four southern states—Kentucky, Tennessee, Georgia and Page’s home state of North Carolina—to establish free and universal, albeit racially segregated, public education.

paideia A Greek word, with no precise English equivalent, except education, in the sense of the totality of educative influences on an individual. Latin-based Romance languages, such as French, continue to differentiate between instruction, referring to school-based

education, and education, referring to the combined educative influences of school, family, peers, society beyond the home and educative institutions outside school, such as museums, theater, concert halls, opera, radio, television, newspapers and a host of others. Since the 1970s American educators have commonly used the Greek word *paideia* to connote the broader, Latin meaning of the word education.

Paideia Proposal (The) One of the most far-reaching curriculum reform schemes developed in the late 20th century for public elementary and secondary schools. It was proposed in 1980 by a group of leading American educators calling themselves the Paideia Group and led by University of Chicago professor MORTIMER J. ADLER. Anticipating subsequent federal government findings about the poor quality of American public schools, the group called for replacing the three-track public education system with a single “back-to-basics,” 12-year academic track. Designed to prepare students for citizenship, encourage lifelong learning and provide skills necessary for earning a living, the program proposed requiring all students to complete a core curriculum. The latter consisted of English, a modern foreign language, literature, fine arts (including music, drama, the visual arts and the performing arts), mathematics, natural science, history, geography, social studies and physical education. In addition, students at appropriate ages were to study varying amounts of industrial arts, depending on whether they were college-bound or headed for jobs after graduating high school.

In addition to curricular reforms, the group proposed pedagogical reforms, including introduction of three simultaneous but distinct forms of teaching: didactic teaching, coaching and Socratic teaching. Didactic instruction would impart basic knowledge “the old-fashioned way,” through memorization, drilling and practice in standard classrooms. Teachers

would then act as academic coaches, literally coaching each student in the practice and development of intellectual skills. Students would then be divided into small groups for seminar-style Socratic instruction, based on teacher questioning and prodding designed to develop higher-reasoning and problem-solving skills. In addition to Adler, the Paideia Group included such educators as JACQUES BARZUN, former provost of Columbia University; Ernest L. Boyer, president of the CARNEGIE FOUNDATION FOR THE ADVANCEMENT OF TEACHING; THEODORE S. SIZER, professor of education at Brown University; and 20 educators, authors and college presidents. Their proposals were issued in a trilogy: *The Paideia Proposal* (1982), *Paideia Problems and Possibilities* (1983) and *The Paideia Program* (1984).

Paine, Thomas (1737–1809) Anglo-American pamphleteer, inciter of the American Revolution and educational philosopher who implanted the notion of public, universal secular education in the American psyche. Born in England, the son of a tradesman, Paine was entirely self-educated. A chance meeting with BENJAMIN FRANKLIN in London convinced him to migrate to Philadelphia in 1774. With an introduction from Franklin, he became editor of the *Pennsylvania Magazine* and two years later, issued *Common Sense*, an anonymous pamphlet whose stirring language roused popular support for independence by calling it only “common sense” for the colonies to sever their ties to England. After he enlisted in the Colonial Army, his inspiring pamphlet *The American Crisis* (which includes the line, “These are the times that try men’s souls”) was read to the troops by order of Gen. George Washington and restored the morale of the dispirited soldiers.

But it was his two later works, *Rights of Man* and *The Age of Reason*, that had the greatest effect on American education. In the former he advocated a republican form of government

based on a constitution, popular sovereignty and political representation and urging free men to overthrow their hereditary rulers. In addition, he called for the establishment of compulsory, universal public education, with the poor to be given subsidies, if necessary, and all children obliged to attend. *The Age of Reason* called for the overthrow of the church and adoption of a universal deistic faith in "one God, and no more." In effect, he called for stripping the church of all powers, including education. He called for conversion of churches into schools of science that would teach men to pursue knowledge on their own. "Every person of learning is finally his own teacher," he said in espousing self-education.

His ideas, of course, were not new. They were embedded in the philosophies of both JOHN LOCKE and ISAAC NEWTON earlier in the century, and Benjamin Franklin, himself the consummate autodidact and confirmed deist, had introduced secular education, free of church influence, in Franklin's Academy in 1749. While the voices and views of men like Franklin, Locke and Newton were known to American intellectuals and to the political, social and financial elite, Paine's ability to write about the most complex issues in the simplest, most easily understandable terms sent his words echoing across the land (and, indeed, England and France) to the common man. It was his ability to disseminate republican views to the general public that provoked former President John Adams to write to a friend in 1805, "I know not whether any man in the world has had more influence on its inhabitants or affairs for the last thirty years than Tom Paine. . . . Call it then the Age of Paine."

Palmer, Alice Freeman (1855–1902)
American educator and pioneer advocate of women's educational rights. Born in rural New York State, when she was 15 years old she broke her marriage engagement to seek a col-

lege education, even, she said, if it took her 50 years to do so. Barred as a woman from attending the vast majority of colleges, it took her nearly seven years to earn a B.A. from the University of Michigan. A year later she was invited to teach at Wellesley, then called a "college," but little more than a boarding school for girls to learn the "domestic arts." She declined, preferring to remain at Michigan to pursue her studies for a Ph.D. History overtook her in 1881, when Wellesley's founder and president, revivalist preacher Henry Fowle Durant (1822–81) died, and the acting president resigned soon after. Wellesley's trustees named Freeman acting president—and president a year later, when she turned 27 and had, indeed, earned her doctorate.

During the next six years, she transformed Wellesley into a distinguished college, academically comparable and often superior to men's colleges of the day. She retired after marrying a Harvard College professor but remained an active advocate of expanded women's educational rights. In 1882, she helped found the Association of Collegiate Alumnae (later the American Association of University Women), twice serving as its president. In 1892, she became the first dean of women at the then-new UNIVERSITY OF CHICAGO, establishing women's education as an integral part of the school's program. Unwilling to spend more than 12 weeks a year away from her home and husband, she relinquished the post after three years.

Palmer Method A system of handwriting instruction developed by Austin N. Palmer (1857–1927) and sold commercially to public and private schools across the United States at the beginning of the 20th century. The Palmer Method replaced what had been the standard way of teaching penmanship, which was to make students copy endless printed examples of handwriting from COPYBOOKS. Interested in

ornamental as well as practical penmanship, Palmer moved from his home state of New York to Cedar Rapids, Iowa, in 1877 to teach at the privately owned Cedar Rapids Business College, where he founded a magazine, *Western Penman* (later *American Penman*). After buying the college in 1855, he used the school and his publication to assail the copybook method of instruction and develop the new Palmer Method, whose series of lessons he published in *Western Penman*. Designed to teach good, legible handwriting, the method used charts, transparencies, instruction sheets, wall cards and desk cards that actively taught writing, rather than relying on the simple hope that endless copying would eventually ingrain good habits. After New York City public schools adopted the Palmer Method, he developed the method commercially, training teachers to use the method and insisting that only trained teachers could use it. By the time he died, he had trained more than 50,000 teachers, directly or by correspondence, and an estimated 15 million students had learned to write using his method.

papier-mâché An inexpensive, easy-to-use material for teaching young students arts and crafts. A French term meaning “chewed paper,” *papier-mâché* is pronounced “paper mashay” in English and consists of shredded paper and paper strips, mixed by hand with any of a wide variety of pastes. Children can then apply the papier-mâché, one strip at a time, in layers, criss-crossed for added strength, to any of a variety of inexpensive forms—tin cans, pieces of wood, etc.—to shape it into sculptures, masks or any other objects they care to create. The finished product, when dried, can be painted and shellacked or varnished to add color and luster and prolong its life.

paraprofessional Any school employee without a teaching certificate whose duties are

tied directly to the instruction process. School paraprofessionals include teacher aides, educational assistants, and auxiliary school personnel who work full- or part-time with regular teachers or administrators. Although mothers have traditionally volunteered their services in many schools, paraprofessionals are paid workers, usually earning only slightly more than minimum wage. The concept was first tried in Bay City, Michigan, in 1953 in an experiment aimed at improving educational quality by freeing teachers of non-teaching obligations in order to devote more time to instruction. Paraprofessionals took over clerical chores, such as recording student grades, copying lesson plans, arranging field trips or supervising students who, for whatever reason, had to be isolated from the rest of the class. Although the Bay City Project failed to lift student achievement, the use of paraprofessionals spread to schools across the United States as an economical way to obtain extra school help to cope with increased enrollment and paperwork.

The role of paraprofessionals expanded considerably after enactment of federal anti poverty programs and laws mandating the inclusion of handicapped students in public schools. As the role of paraprofessionals expanded to the fringes of direct instruction, some school districts insisted that they be better trained, and many community colleges established one- and two-year training programs for educational paraprofessionals.

parent education loans Funds that parents borrow from commercial and noncommercial sources to help pay for the cost of their children’s primary, secondary or higher education. A variety of parent education loans are available from commercial sources. The most common loans for paying for elementary and secondary school education are “tuition payment” and “tuition loan” programs that provide the full costs of tuition (and room and board, where

applicable). Tuition payment plans are offered by a handful of private groups organized for the purpose. They allow parents to borrow a full year's tuition to pay for the child's school and to repay the loan in 10 or 12 equal monthly installments at no out-of-pocket interest costs. Payments usually begin, however, three to four months before the child enrolls, allowing the lending organization to earn interest on those funds and then pay each semester's tuition in full at the time the child enrolls. Tuition loans, usually called educational credit lines, are simply unsecured personal bank loans carrying conventional commercial interest rates.

At the college and graduate school level, both tuition payment plans and tuition loans are available. In addition, colleges themselves offer tuition-payment plans that permit parents (or students themselves) to pay tuition on a monthly basis. Some colleges offer extended low-interest repayment plans that allow parents to repay tuition over 10 years following their children's graduation. The federal government sponsors one parent educational loan program. Called PLUS, the government-guaranteed loans are based on creditworthiness rather than need and are available from local banks, credit unions, savings and loan association and special programs such as College-Credit, sponsored by the COLLEGE BOARD. PLUS Loans permit parents to borrow up to \$4,000 a year without collateral and without a specific purpose. They can be used to meet all or part of parents' expected contribution to their child's college costs—or simply to pay for the many unexpected bills that accumulate as part of a child's attending college. Interest rates vary according to the market but are capped at 9%. Parents can extend repayment over 10 years but are expected to begin repayment 60 days after the loan is granted.

parent education movement A vague conglomeration of civic organizations, churches

and other groups that opposed enactment of compulsory education and child labor laws in the late 19th and early 20th century. Arrayed against them were child welfare progressives seeking to end child labor, to "Americanize" the swarms of immigrant children roaming city streets unsupervised and to replace the family as the primary source of education of the young.

"If these children of illiterate immigrant parents cannot be placed in school soon after their arrival in this country," warned Sophonisba Breckinridge and Edith Abbot in a pamphlet entitled *Delinquent Child and the Home* (1912), "the way to delinquency through dependency is sure to be open." Parents, they said, not only miseducated their children, they also exploited them by malnourishing them to save money and sending them to work prematurely to earn money. "The best child-labor law is a compulsory education law covering forty weeks of the year and requiring consecutive attendance of all the children to the age of 14 years," declared social reformer FLORENCE KELLEY, founder of the National Child Labor Committee.

The opponents of the parent education movement eventually prevailed. Between 1890 and 1918, the 23 of the 48 states without compulsory education laws enacted them, and by 1918 compulsory education was the law of the land. In general, the laws forced all children between the ages of six, seven or eight and 14, 15 or 16 to attend school most of the year. Vestiges of the original parent education movement exist in the current HOME SCHOOLING MOVEMENT, which is responsible for more than 1.5 million children being taught at home by parents instead of attending school.

parent effectiveness training (PET) The education of parents in effective techniques of raising their children, or "parenting." Widely available in adult education classes at schools and colleges and from a variety of private organizations and associations, parent education

generally instructs parents about infant and child growth and development, health care and child training. Although most such education is designed for first-time parents-to-be and parents of infants, various parent-education programs focus on early and late childhood, early adolescence, adolescence, sexuality, drugs and other chemical substances, violence and other problems children face in modern society. Parent effectiveness training, or PET, focuses on improving communication between parents and children by teaching listening skills. The parent-education movement has also spawned a thriving industry of books on parenting and child development.

parent involvement in education The direct or indirect participation of parents in the formal or informal school-based instruction of their children. Studies sponsored by the U.S. DEPARTMENT OF EDUCATION have found that students do best in school when their parents “take a managerial role in relation to the school, viewing themselves as being in charge of their child’s educational career.” The education reform movement of the 1990s spurred an enormous growth in parental involvement in their children’s education, with the percentage of parent participation climbing from 62% to more than 75% in the five years ending in 2000. According to Department of Education surveys, the percentage of parents who attended parent-teacher organization meetings climbed from fewer than 40% to nearly 71%, and nearly 73% of all parents were providing their children with some help in their homework, compared to only 30% five years earlier.

Although parental involvement did not vary substantially according to racial or ethnic differences, it did vary sharply with family income and level of parent education. Nearly 90% of parents with family incomes over \$75,000 a year were actively involved in their children’s education, compared with less than

70% of parents with family incomes of less than \$25,000—a figure that may, however, reflect nothing more than the amount of leisure time accorded one or both parents in higher-income families. More than 85% of parents with college or postgraduate degrees involved themselves in their children’s education, compared with fewer than 60% of parents without high school diplomas and between 70% and 75% of parents with high school diplomas but little or no college. Parental involvement falls as children grow older, with 80% of parents of public elementary school children involved in school activities, but only 63% involved in school activities of secondary school children. Parents of private schoolchildren are far more involved in school activities—92% in the case of parents of elementary school children and 85% of parents of students in secondary school. Students whose parents provide music classes or other supplementary education outside school and offer some form of adult supervision after school also tend to be higher achievers, according to the department’s findings.

Parental involvement has proved a two-edged sword, however. In some communities, parents have cooperated with school authorities by imposing behavioral controls on their children; by reading to their children; by limiting their children’s television viewing; by monitoring their children’s homework; by supporting teacher demands for greater academic effort by the children; by supplementing their children’s formal education at school with cultural enrichment out of school; and by monitoring their children’s out-of-school activities to help prevent chemical substance abuse and premature sexual experiences.

In other communities, however, parents interpreted the call for more parental involvement in education as an invitation to interfere in the educational process and to impose political, moral and religious beliefs on local school

systems. Across the country, schools continue to be inundated by parental demands that books they deem inappropriate—from Mark Twain’s *Huckleberry Finn* to John Steinbeck’s *Grapes of Wrath*—be banned from school reading lists. Many schools now routinely use modified versions of such plays as William Shakespeare’s *Romeo and Juliet*, cleansed of all erotic humor. Still other parents continue to demand that “creation science,” based on biblical interpretations of the beginnings of the world and man, replace science courses based on the theory of evolution.

Many parents also demand that legislatures pass laws forcing schools to conduct moments of compulsory PRAYER IN SCHOOL—legislation that has invariably been declared unconstitutional by the U.S. Supreme Court after costly litigation. Indeed, the call for parental cooperation in improving education has often deteriorated into drawn-out court battles that have skirted the question of improved instruction and created an atmosphere of bitter hostility that made parent-teacher cooperation all but impossible in many communities. Quality of education is no longer the issue. At stake is the question of whose truths are to be taught in public schools—the truths of parents or the truths of professional educators. Parents contend that schools supported by their taxes do not have the right to teach children truths that controvert the beliefs of their parents. For educators, the question has become one of how to stimulate the specific type of limited parental involvement that they, the educators, believe appropriate—and to do so without appearing to be intruding on parental rights of free speech.

(See also CHURCH-STATE CONFLICTS.)

Parent-Teacher Association (PTA) A local organization of parents and teachers, often affiliated with the NATIONAL CONGRESS OF PARENTS AND TEACHERS, known as the National PTA, to promote parent-teacher cooperation and

unanimity in guiding children’s education. Although the national group is primarily a child advocacy group that lobbies for improved education, local PTAs are primarily concerned with improvement of education in schools within each district. Usually associated with elementary schools, PTAs are made up of parent and teacher volunteers, who promote fundraising activities, parent education, field trips for children, parent-child activities and closer understanding between parents and teachers. The National PTA is the successor organization of the NATIONAL CONGRESS OF MOTHERS, which was founded in 1897 and lobbied successfully for introduction of kindergartens as a standard element of public schooling.

National PTA membership, however, has dropped steadily for several decades, from a high of more than 12 million in the early 1960s to less than 7 million in 2006. Only about one-fourth of America’s 120,000 K–12 schools now have PTA chapters, and critics insist the decline reflects a change in PTA complexion from an in-school service group to a special-interest organization promoting the interests of the two teachers’ unions, the NATIONAL EDUCATION ASSOCIATION and UNITED FEDERATION OF TEACHERS. PTA national headquarters are in the NEA national headquarters building in Chicago, and the PTA supports almost all teacher-union positions, including opposition to independent CHARTER SCHOOLS and teacher pay scales based on merit as well as seniority. In some areas, parent opposition to PTA union support has spawned the formation of independent PARENT-TEACHER ORGANIZATIONS with by-laws that ban taking stands on political and union affairs.

parent-teacher conference A one-to-one, private meeting between a student’s parent and teacher to discuss the student’s academic, social and behavioral progress and problems in class and school. The meeting is designed to produce an exchange of concerns, if they exist, and

foster cooperation between teacher and parent in helping students progress. Short (usually about five to 10 minutes) parent-teacher conferences are usually an integral part of an OPEN SCHOOL NIGHT, but teachers and parents often meet for longer conferences, if needed, to discuss a student's specific problems during the school year. About 60% of parents of public elementary school students and 20% of parents of public high school students participate in such conferences each year.

Parent-Teacher Organization (PTO) A local, volunteer association of parents and teachers, operating exactly as a Parent-Teacher Association, but unaffiliated with the NATIONAL CONGRESS OF PARENTS AND TEACHERS. The names "PTA" and "Parent-Teacher Association" are copyrighted and can be used only by National PTA affiliates. PTOs first began appearing in 1999, in reaction to increased PARENT-TEACHER ASSOCIATION involvement in the political activities of the two teachers' unions, the NATIONAL EDUCATION ASSOCIATION and UNITED FEDERATION OF TEACHERS. PTOs focus solely on organizing local activities and field trips for school children, raising funds for extra supplies in areas such as arts and crafts, and the once-traditional activities of PTAs.

parietals An all-but-archaic term referring to regulations and restrictions governing living conditions and visiting privileges permitted to the opposite sex in boarding school, college and university dormitories. Derived from the Latin *paries*, or wall, parietals disappeared from most college campuses in the United States following the 1960s, when rebellious students demanded and won the right to coeducational living and to come and go from their dormitories at will.

Parker, Francis W. (1837–1902) American educator acknowledged by JOHN DEWEY as

the "father of modern education." Born in New Hampshire, the orphaned Parker was raised by a farmer who permitted him to go to school for only eight weeks in winter, between the fall harvest and first spring planting. When he was 13 he left the farm and enrolled in an academy. At the age of only 16 he began teaching, and at 21 he moved to Illinois to become a school principal, a post he held until the Civil War.

After three years of service (he rose to the rank of colonel), he resumed his career as a school administrator, assuming a principalship in New Hampshire from 1865 to 1868 and the superintendency of schools in Dayton, Ohio, from 1868 to 1871. By then he had read and had been strongly influenced by educator EDWARD A. SHELDON, the founder of a teacher training school in Oswego, New York, and one of the first American authorities on the new Pestalozzian teaching methods.

In 1871, Parker went to Europe for three years to study the theories of John Amos Comenius, JOHANN HEINRICH PESTALOZZI, Johann Friedrich Herbart (see HERBARTIANISM) and FRIEDRICH FROEBEL at the University of Berlin. He returned to the United States and, as superintendent of schools in Quincy, Illinois, he replaced traditional rote learning and harsh discipline with the methods he had studied in Europe, encouraging freedom of expression, informality in classroom instruction, relaxed methods of discipline and experiential learning. He replaced traditionally rigid curriculum requirements with flexible curricula geared to students' needs and abilities. He introduced science into the curriculum and retrained teachers to make use of maps, drawings, models and even stuffed animals to illustrate literature, the sciences and the arts.

The results electrified the world of education. Student achievement soared, and Parker was called to bring his program—by then known as the QUINCY MOVEMENT—to Boston, where from 1880 to 1883 he modernized the system of education in that city's public schools.

In 1883, he was invited to Chicago to revamp the system of teacher education at the Cook County Normal School (later Chicago State University). In 1899, he received a large grant to found the Chicago Institute, where he established a practice school as a basis for training teachers to use new teaching methods. The institute was incorporated into the UNIVERSITY OF CHICAGO in 1901 as the School of Education—the first such university-affiliated school in the United States. Parker remained director until his death a year later. Although Parker's practice school was merged with John Dewey's LABORATORY SCHOOL, Dewey moved to New York to assume a Columbia University professorship rather than remain in Chicago to succeed Parker. Parker's numerous works include compilations of his lectures in *Talks on Pedagogics* (1894) and *Talks on Teaching* (1896) and such books as *The Practical Teacher* (1883) and *How to Teach Geography* (1889).

parochial school A full-time elementary school operated by a church parish for parish children and combining traditional secular with religious instruction. Roman Catholic elementary schools constitute the largest group of parochial schools, with about 6,800 of the nearly 13,600 religious elementary schools in the United States. (Most of the more than 1,200 Roman Catholic high schools are run by a diocese, or bishopric, and are not, therefore, classified as parochial.) Dutch Reformed, Calvinist, Presbyterian, Quaker, Lutheran, Baptist and Anglican (later Episcopalian) Churches have sponsored parochial schools almost since the arrival of the first settlers, and Protestant parochial schools formed the core of American common school education until the establishment of secular state public schools beginning in the late 1830s. The more than 1,000 Lutheran and 1,000 Seventh-Day Adventist schools rank second among the schools affiliated with specific churches.

Although scattered Roman Catholic parochial schools existed before the American Revolution, it was not until 1884, at the Third Plenary Council of Baltimore, that church leaders ordered the construction of a parochial school near every Catholic church in the United States. At the time, the church was concerned about the pervasive influence of Protestantism in public school education. Some Jewish groups with the same concerns began building the first Hebrew schools at that time. Since then, Seventh-Day Adventist, Mormons and other non-traditional Protestant sects have followed suit.

In the last decades of the 20th century, fundamentalist Christian groups unaffiliated with specific churches have established an estimated 4,000 parochial schools with a total enrollment of about 1 million students. Their growth contrasts with the decline in number of and enrollment in Catholic parochial schools, which reached a peak of more than 10,500 in 1960, with an enrollment of about 4.4 million. Most of the decline resulted from a massive exodus of Catholic families from cities to the suburbs, where few parochial schools existed and relatively new, well equipped public schools with religiously heterogeneous populations kept instruction scrupulously secular. Like other religious groups, Catholics have availed themselves of church-run Sunday schools for religious instruction of their children.

parts of speech Categories of words, grouped according to their functions in phrases and sentences. Thorough familiarity with the parts of speech is essential to proper grammar for writing and speaking. Taught throughout the elementary and secondary school years, the parts of speech may be classified in seven to 10 categories, depending on the specificity of each. The broadest, most common breakdown of parts of speech shows eight categories: nouns, pronouns, verbs, adjectives, adverbs, prepositions, conjunctions and interjections. However,

nouns may be subdivided into participles and gerunds, while articles and, indeed, participles may be factored out of the broad category of adjectives. Both participles and gerunds, moreover, are verb forms.

part-time schooling Formal instruction consisting of less than a conventional, full-time course load at secondary school or college. Part-time instruction is available in the full range of academic, vocational and self-improvement courses in most secondary schools, colleges, universities and entrepreneurial schools in class or on-line. Part-time schooling allows working adults to continue their education without reducing their working income or disrupting their working lives.

pass-fail grading A system of scoring student academic work on the basis of whether the work was satisfactory or unsatisfactory. Often used at the college level, the system replaced more precise conventional MARKING SYSTEMS at many colleges in response to student demands during the student rebellions of the 1960s. At the time, poor grades automatically qualified students for the military draft and possible service in the Vietnam War. Students also contended that precise grades unfairly affected their chances of obtaining jobs following college and the quality of the jobs they did get. Moreover, they insisted that the study of many courses unrelated to their future careers often interfered with the successful pursuit of such careers. Pass-fail grading began disappearing in the 1980s, when professional schools began refusing to admit students without a precise record of academic achievement at college.

Pastorius, Francis Donald (1631–1720?) Attorney, author, noted early colonial educator and founder of the community of Germantown, Pennsylvania. Born and educated in Germany, he practiced law there until a chance

meeting in 1682 with William Penn, who interested him in the American colonies. The following year he agreed to serve as land agent for a group of Quakers in Frankfurt, Germany. He traveled to Pennsylvania, where he purchased 15,000 acres and laid out the town of Germantown, near Philadelphia. He was the town's first mayor and remained its leader for the rest of his life, pioneering Quaker education there and in Philadelphia. In 1688, he joined a group in signing the first document in the English colonies to protest slaveholding. A prolific writer, he turned to teaching in 1698, serving as an instructor in the Friends' school in Philadelphia until 1700 and then as master of a school in Germantown from 1702 to 1719. The Friends' schools remain among the most academically demanding primary and secondary schools in the United States. He was author of the first schoolbooks written and published in Pennsylvania—*A New Primmer or Methodical Direction to Attain the True Spelling and Reading & Writing of English* (publication dates unknown).

patterning In language education, a many-faceted term referring to the combination of verbal elements to produce a complete message. At the simplest level, the task of preschool and elementary school teachers (and parents) is to convert the grunts, sounds and other effusions of preliterate children into patterns of comprehensible language messages. Patterning also applies to the complex work of teachers of learning-disabled students with difficulties reading complete words. The task is to break down the words into elements small enough for the students to read and pronounce accurately, then gradually reconstruct them into larger patterns, or complete words.

In psychology, patterning refers to the conversion of external stimuli into meaningful experiences. The word patterning has also been adopted by the Institutes for the Achievement of Human Potential in Philadelphia as the term

for their specialized treatment of brain-injured children. The controversial treatment involves repeated physical manipulation of body parts affected by brain damage until uninjured parts of the brain are “patterned,” or programmed, to assume control of those functions.

pauper schools Free schools for educating the children of the poor from the end of the colonial era in America through the first century of independence. The precursor of American public schools, pauper schools originated in England as a way of ensuring that poor children did not grow up unlettered, unable to calculate and uninstructed in morality and Christian beliefs. Churchmen operated most schools during the American colonial era, often teaching poor children free of charge. Although most poor children went to work as young as five years old, the growth of urban society began producing increasing numbers of unemployed children. While families with adequate funds sent their children to church schools and private academies, charitable organizations began establishing pauper schools to absorb the rest of society’s children. Often called “free schools” in the North, the number of pauper schools grew throughout the first half of the 19th century, until states began establishing free public school systems open to children of all classes.

Peabody, Elizabeth Palmer (1804–1894) Pioneer American educator and founder of one of the first American kindergartens and one of the first schools to admit girls. Born in Massachusetts, Peabody opened her first school in Lancaster, Massachusetts, at the age of 16, admitting both girls and boys—a daring move at the time in staid Massachusetts. With her sister Mary, she opened another coeducational school two years later on Boston’s fashionable Beacon Hill. It attracted students from Boston’s most prominent families, who overlooked the coeducational aspects of the school to avail

their children of Peabody’s superlative teaching skills.

in 1834, after her school ran into financial difficulties, she became assistant director of the renowned AMOS BRONSON ALCOTT’s Temple School in Boston, whose then-unconventional teaching methods, including Socratic dialectic, she described in her book *Record of a School* (1835). By this time, she had become a member of the highest social and literary circles. Her sister Sophia married Nathaniel Hawthorne, while her sister Mary would later marry the celebrated Massachusetts legislator HORACE MANN. Both she and her sister threw themselves into Mann’s successful statewide campaign to establish a state public school system.

In 1839, Peabody opened a bookshop whose back room became a center for intellectual soirees. She set up a press to publish the *Dial*, a publication for transcendentalist intellectuals, and she published the essay “Civil Disobedience,” written by her coeditor Henry David Thoreau (1817–62). In addition, she published pamphlets for Boston’s Anti-Slavery Society and three of Hawthorne’s books. From 1845 on, however, she devoted herself almost entirely to education, publishing a widely used textbook, *Chronological History of the United States* (1856). In 1860, she opened the first kindergarten in Boston and one of the first in the United States. She closed the kindergarten in 1867 and spent a year in Germany studying the teaching methods of FRIEDRICH FROEBEL, who developed the first kindergarten. She returned to the United States and devoted the rest of her life to lecturing and writing to promote the kindergarten movement. From 1873 to 1875 she published the widely read *Kindergarten Messenger*, which helped make kindergartens an integral part of education throughout the United States.

Peabody, George Foster (1795–1869) Massachusetts-born railroad magnate, financier and philanthropist whose financial gifts

were largely directed toward education. Born in South Danvers, which was later renamed Peabody in his honor, he accumulated a sizable fortune as president of the Eastern Railroad. He built that fortune to even larger proportions after opening his own banking and brokerage firm, George Peabody and Company. Then, in a move that startled his contemporaries, he began giving the vast majority of his fortune away to philanthropic and educational endeavors. He provided the founding endowments of the Peabody Institute, a music conservatory, art gallery and library in Baltimore; the Peabody Institute, which maintains a free library and offers lecture courses in Peabody, Massachusetts; the Peabody Museum of Natural History and Natural Sciences, at Yale University; the Peabody Museum of Archeology and Ethnology, at Harvard University; the Peabody Academy of Sciences in Salem, Massachusetts; and the PEABODY EDUCATION FUND, which helped regenerate education throughout the South.

Peabody Education Fund A philanthropic trust established in 1867 by Massachusetts financier and railroad magnate GEORGE FOSTER PEABODY to build schools and promote education in the south. Like many northerners after the Civil War, Peabody believed that the best way to teach the defeated South the error of its ways was to teach it northern values and culture, primarily through education in common schools. It was "up to the teacher to finish the job that the soldier had begun," said one educator at the time, and hundreds of young, northern men and women marched south under the auspices of the FREEDMEN'S BUREAU to educate freedmen. To help that work, Peabody established his fund "for the promotion and encouragement of intellectual, moral, or industrial education among the young of the more destitute portions of the southern and southwestern states of our Union; my purpose being that the benefits shall be distributed among the

entire population without other distinction than their needs and the opportunities of usefulness to them." The Peabody Fund's major initial contribution was the establishment of the George Peabody College for Teachers in Nashville, Tennessee, which trained hundreds of teachers who fanned out across the South opening new schools. Other Peabody Fund gifts helped underwrite the founding of teacher training schools in Georgia and other states.

Peabody Picture Vocabulary Test (PPVT)

An easy-to-administer, easy-to-score intelligence test, widely used as a reliable indicator of vocabulary development. Available in forms geared for individuals from two years old to 90, the test consists of 150 plates, each with four pictures on it. The examiner states the name of an object depicted on the plate, and the test-taker is expected to point to the picture containing that object. Although not precise, it is a quick and easy method of obtaining an idea of a test-taker's intelligence, and it correlates fairly well with far more sophisticated I.Q. tests that are more difficult and costly to administer.

Peace Corps A federal government program through which Americans may volunteer in public service work overseas. Created by executive order of President John F. Kennedy in 1961 and formally established by the Peace Corps Act, the Peace Corps was organized and directed by Kennedy's brother-in-law R. Sergeant Shriver and sent tens of thousands of Americans overseas as schoolteachers, agricultural advisors and health specialists. Assigned mostly to less developed countries in Asia, Africa and Latin America, Peace Corps members volunteer for two years to serve in agricultural demonstration work, vocational training, rural community development, youth club organization, public health instruction and conventional teaching. The Peace Corps pays each volunteer a nominal living allowance and a readjustment

allowance upon their return to the United States. Each receives training lasting from six weeks to six months. Included is instruction in the native language and customs. Volunteers are expected to live "at the same level as the citizens of the country which they are sent to, eating the same food, speaking the same language" and living in the same housing. The Peace Corps proved so successful that it spawned creation of a sister, domestic Peace Corps in 1974. Like the Peace Corps, VISTA, or Volunteers in Service to America, trains volunteers for public service but sends them to low-income areas of the United States.

Peacham, Henry (1576?–1643?) English author and teacher whose book *The Compleat Gentlemen* (1615) detailed a curriculum that became the standard for private schools and academies in the American colonies (and later the United States) through the early 20th century. A deep believer that education was reserved to the nobility, Peacham's social views were expanded in the colonies to include the landed gentry. The curriculum he suggested included traditional English studies in Latin and Greek but added a wide range of subjects not generally included in most English schools of that era. Among them were English ("while you are intent to foreign authors and languages, forget not to speak and write your own properly and eloquently"); cosmography (the study of the world, or "cosmos"); geometry, poetry and music; drawing, limning and painting; heraldry; and physical exercise.

Peale, Charles Willson (1741–1827) Renowned American portrait painter and engraver and, in 1786, founder of the first museum in the Americas, Peale's Museum in Philadelphia. Born in Maryland, Peale studied portraiture with Benjamin West in London. He returned to Annapolis, Maryland, in 1769 and for the next seven years developed into Ameri-

ca's most renowned portrait artist. His 1772 portrait of George Washington was the first of seven he painted from real life, although he produced a total of 60 of the Washington portraits that hang in museums across the United States and dozens more that remain in private hands. In 1776, he moved to Philadelphia, where he painted government officials and foreign dignitaries. He helped recruit soldiers for the Continental Army, was made a captain, and in 1779 was elected to the Pennsylvania General Assembly. In 1780, he returned to the world of art. Determined to create a gallery to commemorate the Revolutionary War and its heroes, he built an exhibition room adjoining his home in 1782 "for the reception and entertainment of all lovers of the fine arts, being ornamented with the portraits of a great number of worthy personages."

Two years later, while making drawings of some mastodon bones for a scholar, he decided to display them to visitors to his portrait gallery. The bones drew so many additional visitors that Peale envisioned a vastly enlarged institution that would convert his gallery into a museum and house an all-encompassing exhibition of the natural world. Seeking to make his future museum more appealing, he developed a new technique of "moving pictures," which combined projections of glass transparencies with sound and lighting effects. The announcement of his plans for the new museum attracted a flood of contributions from around the world—birds, snakes, fish, fossils, insects, minerals, plants, etc.—that soon spilled out of his little exhibition room. He moved his collections to the American Philosophical Society's exhibit hall in 1794, and in 1802, when the Pennsylvania capital moved to Lancaster, he moved his museum into the empty State House. In the yard, live bears, monkeys and parrots moved about at will, while inside, Peale displayed a variety of new inventions and machines and demonstrated

the newly appreciated phenomenon of electricity. Towering above the visitors was the reassembled mastodon skeleton, while displays of stuffed birds and other artifacts were assembled on miniature stage sets in front of great landscapes that Peale had painted on the walls to portray events in history and natural science. Above the main entrance hung a sign, "MUSEUM: GREAT SCHOOL OF NATURE," while a sign on a second entrance read, "SCHOOL OF WISDOM."

Peale's Museum, or, as he liked to call it, the Philadelphia Museum, became one of the most important educative institutions at the beginning of the 19th century, when only the children of the landed gentry could afford to go to school. The museum taught the unschooled natural history, science and American history. In 1803, Peale cofounded the first American museum devoted exclusively to art, the Pennsylvania Academy of Fine Arts. He also taught all 17 of his children to paint, including the renowned Raphaelle, Rembrandt and Titian Peale. His museum, meanwhile, was widely imitated. Indeed, Peale's son Rembrandt opened a similar museum in Baltimore in 1814, while Rubens Peale opened a Peale's Museum in New York in 1825.

pedagogy The art, science and technique of instruction. There are two basic elements in pedagogy: the instructor (that is, the teacher or scholastic institution) and the instructed (the student). Depending on the relationship between the two, the degree of participation of each in the instruction process and the means of knowledge transmission, pedagogy is said to be either scholiocentric or pedocentric. In scholiocentric pedagogy, the institution is central to the educational process and the relatively passive student of secondary importance; in pedocentric pedagogy, the student, or child, is central to and active in the educational process, and the institution simply a conduit or facilitator.

Within each broad pedagogy, there is a wide assortment of pedagogical variations, each with its own degree of scholio- or pedocentricity.

Historically, American pedagogy has evolved from extreme scholiocentricity to a range of pedocentric pedagogies. The most extreme scholiocentric pedagogy dates back to the earliest universities of Renaissance England, when the learned sermon was the sole method of instruction. Its modern counterpart, the lecture, remains the core of much college and university pedagogy, with students of little import to the educational process. There is no active instruction in the process. The lecture takes place whether students are present or not. Knowledge is presented orally or in print, and students must gather the materials and teach themselves. With churchmen in charge of early colonial education, the learned sermon remained the primary pedagogy in grammar schools and at the early colleges, such as Harvard, William and Mary, and Yale. Professor/ministers with the proper teaching instincts prepared their sermon/lectures carefully, proceeding from simple ideas and building up to the more complex.

Primary education was slightly more pedocentric. In the home and in apprenticeships, it took the form of various craft demonstrations by parents, with children encouraged and "taught" to imitate. In church and school, a degree of pedocentric pedagogy was introduced with the religious practice of catechizing children, with the minister/teacher instructing, informing and explaining before asking questions and awaiting the student response. The teacher, in other words, actively taught, and the student became an integral part of the educational process. As pedagogy became more pedocentric, however, religious beliefs gave it a variety of forms, depending on the minister/instructor's belief in original sin.

Puritans and "Old Light" Congregationalists believed infants were born evil, bearing the

taint of Adam and Eve's original sin. Having thus fallen from grace, every action that violated scriptural teachings, every lapse in proper behavior and every academic error in class was the work of Satan, and the only religiously proper pedagogical response was to "beat the Devil" out of such students. Thus, the infliction of pain became an integral element of American pedagogy—regardless of how pedocentric the instruction might otherwise have been—throughout the colonial era and well past the first century of independence. Indeed, to this day, 20 states continue to permit corporal punishment in school.

The evolution of pedocentric pedagogy, with or without infliction of pain, did not necessarily produce any immediate improvement in the quality of education. Indeed, the ONE-ROOM SCHOOLHOUSE that became the predominant rural school of the 19th century proved one of the most pedagogically inefficient institutions in the history of American education. Most were in session only during the two or three months of winter, between the last fall harvest and first spring planting, when children, who normally worked beside their parents in the fields, were idle. Some schools also opened for a few weeks in summer when heat waves idled most farm workers. Instruction was, at best, inadequate and inefficient, with one teacher in charge of 40 to 60 boys (and some girls), who were usually grouped informally by age or ability level and according to the subject each was studying. Thus, depending on each child's previous education, a group studying beginning arithmetic might include children ranging in age from six to 12.

In colleges and universities, meanwhile, a different kind of pedagogy had developed, based on the lecture, the declamation and the disputation, with the master using the lecture as an oral textbook to expose a body of knowledge and pose questions about each element. Students, in turn, were expected to read all

available books on the subjects and "declaim," or display, that knowledge orally before the class. In the disputations that followed, students engaged in formal arguments or debates about questions raised by a moderator. Students who failed were not whipped; they were simply expelled and sent home to their parents. By law, they were still minors.

In elementary and secondary schools, kindness did, however, gradually replace pain as the most effective teaching tool during the 19th century and early 20th century. Although the process was indeed evolutionary, 1874 may be said to have the critical year when the pedagogical pendulum in American primary and secondary education swung from scholiocentricity to pedocentricity. It was in this year that the American educator FRANCIS W. PARKER, who had spent three years in Europe studying the educational theories of John Amos Comenius, Johann Heinrich Pestalozzi, Johann Friedrich Herbart (see HERBARTIANISM) and FRIEDRICH FROEBEL, introduced these theories into the public school system in Quincy, Illinois. Adding Friedrich Froebel's KINDERGARTEN to elementary education, Parker extended Froebel's theories of learning through play into the early elementary grades. Parker then replaced traditional rote learning and cruel discipline with informality in classroom instruction, freedom of expression, relaxed methods of discipline and experiential learning. He replaced traditionally rigid curriculum requirements with flexible curricula geared to student needs and abilities. He retrained teachers to make instruction more enjoyable for students by using maps, drawings, models and even stuffed animals to illustrate literature, the sciences and the arts.

The results electrified the world of education. Student achievement soared, and Parker was called to bring his program—by then known as the "QUINCY MOVEMENT"—to Boston and later Chicago, where he also established

the first normal school that taught future teachers the new pedocentric pedagogy. In the 1890s, educator/philosopher JOHN DEWEY codified Parker's teaching methods into what was called PROGRESSIVE EDUCATION, a thoroughly pedocentric philosophy that forced teachers to study, evaluate and understand each student's needs and development and to adapt the curriculum and teaching methods to those needs and thus optimize the student's ability to understand and absorb knowledge. The student, in short, became the center of the educational process.

The pedocentric pedagogy of progressive education gradually spread throughout American public education across the United States. Schools everywhere added kindergartens, expanding the kindergarten population sevenfold between 1900 and 1940. School systems expanded public education beyond elementary school levels, increasing the number of high schools by a multiple of 10 within those same four decades. To accommodate the increasingly diverse high school population, schools added VOCATIONAL EDUCATION to the core academic curriculum. Expanding pedocentricity led to the addition of extracurricular activities such as athletics, clubs and student government to make school more enjoyable and give students a voice in the direction of their school lives. Most schools added playgrounds, gymnasias, athletic fields, cafeterias and, after World War II, swimming pools to temper the academic routine with a variety of recreation. Schools added many noninstructional services such as vaccinations, health examinations, meals and counseling to ensure the health and safety of students. Even teaching materials became more pedocentric with the evolution of more colorful and attractively illustrated textbooks, slides, filmstrips, phonograph records and tools such as flash cards. In an effort to ensure student success, teachers grouped pupils according to their intelligence, aptitude and achievement. Discipline grew less harsh and encouragement,

reward and correction replaced punishment. School architecture and facilities grew more pedocentric with colorfully decorated hallways, attractive classrooms and a wide variety of recreation facilities.

After World War II, pedocentricity expanded still further with the installation of computers and a range of electronic, audiovisual teaching equipment. The addition of bilingual education for foreign-born and other students without command of the English language, and special education for the learning-disabled and handicapped extended the pedocentric pedagogy to individuals who had been totally ignored and barred from the scholastic education of earlier times. School architecture was altered to make buildings barrier-free for the physically handicapped. In every respect, American education forced the school to adapt to the needs of students rather than the reverse.

It was inevitable that at least a few educators would misunderstand progressive education and carry pedocentricity to as absurd an extreme as the scholasticists had carried their pedagogy. Indeed, some reshaped primary and secondary education into so-called "OPEN EDUCATION," which permitted students to all but dictate what they would and would not learn. The teacher and the school, in short, were all but omitted from the educational process, and the student became the central and dominating element. Other educators abandoned pedagogy altogether, believing that kindness and caring would provide children with so strong an emotional foundation that their intellects would grasp knowledge independently of formal instruction. In an effort to calm campus disturbances in the 1960s, many colleges and universities adopted a similar form of pedocentrically extreme pedagogy, all but abandoning all educational requirements and allowing students independently to determine their courses of study. The irony of such curricular pedocentric-

ity is that it took place in institutions where the scholiocentric lecture remained the heart of the institutions' pedagogies.

The result of such extreme pedocentric pedagogies was a sharp decline during the 1970s and 1980s in the academic proficiency of American students of all ages. Although higher education continues to depend on the same contradictory blend of pedocentric curricular and scholiocentric pedagogies, elementary and secondary education is attempting to extract the most effective elements of both pedagogies to provide students with the most effective teaching methods. The development of a standard, consistently effective pedagogy for American students remains the primary thrust of the many educational reform movements under way. In the meantime, most schools rely on decidedly pedocentric pedagogies or progressive education, geared, wherever class size permits, to adapting the curriculum and teaching methods to the needs and development of the individual student. Almost all American schools, however, are tempering such pedocentricity with scholiocentric competency and achievement tests to determine whether to permit students to advance to the next grade or graduate.

peer teaching/peer tutoring The instruction of one or more students by another student. Students who tutor are usually the same age as or older than the students taught. Often called cooperative learning, organized same-age peer tutoring developed in some public elementary and secondary schools in the 1970s as a pedagogy for handling large classes. Teachers divided classes into small teams, with each team's student members responsible for learning and teaching each other a body of material. Team members were chosen on the basis of complementary strengths and weaknesses. Interacting much as members of an athletic team, team members helped each other solving

problems, encouraged each other, drew on each other's strengths and offered academic and emotional support to strengthen each other's weaknesses.

Cooperative learning frees the teacher to move from team to team focusing on team and individual weaknesses rather than engaging the entire class's attention for one student's benefit. Teams are free to call on the teacher's help at any time and, when appropriate, the teacher may call the entire class together to focus on a common problem. Cooperative learning has been found to promote tolerance, interracial amity, altruism and self-esteem, while generally raising academic achievement in large classes. It can, however, lead to breakdowns in classroom discipline, and its success depends enormously on teacher skills in assigning responsibilities and on student academic motivation.

A second type of peer tutoring, often called cross-age tutoring, has its origins in the LANCASTERIAN SYSTEM of educating orphaned and poor children at the beginning of the 19th century. To educate, by himself, 1,000 children in an English orphanage, minister Joseph Lancaster trained his older, brightest students who, in turn, taught what they knew to groups of younger students. With one teacher training and teaching 10 older students in the morning, and each of the students then teaching 10 younger students in the afternoon, one teacher, in effect, "taught" 100 students, and 10 teachers taught 1,000. In 1818, Lancaster immigrated to the United States, where his system was adopted in schools in Boston, Philadelphia, Baltimore and Washington, D.C. The Free School Society, a Quaker organization that educated poor children free of charge, used the Lancasterian system in about 60 schools at a cost of about \$1.22 per child per year.

The Lancasterian, or monitorial, system disappeared in the last half of the 19th century as the new state-run public school systems began to impose training and certification

requirements for all teachers. Some private secondary schools permit older students bound for teaching careers to practice-teach an occasional class of younger students in a subject in which the student teacher is particularly gifted. Such classes are always supervised by experienced adult teachers.

In the last decades of the 20th century, cross-age peer teaching became quite common in many budget-strapped colleges and universities, where professors assigned low-paid graduate students—so-called teaching assistants—to teach undergraduate courses at enormous savings in faculty costs to the colleges but with noticeable declines in teaching effectiveness. Peer teaching is also used to connote “practice” teaching in teacher colleges, with one student teacher “teaching” a class of other student teachers who then critique the teacher’s techniques.

Pell grants A federal government program introduced in the 1973–1974 academic year to provide grants to encourage students who have not received their bachelor’s degrees to pursue post-secondary education. Initiated by Senator Claiborne Pell (D, R.I.) and originally called Basic Educational Opportunity Grants, the program is the largest need-based student aid program, providing grants ranging from several hundred dollars to more than \$4,000 annually to students enrolled at least half-time (six semester hours) in a two-year or four-year college or a vocational, proprietary or technical school. Designed to encourage pursuit of post-secondary education, Pell grants vary from year to year, depending on the number of students who apply and on the government budget for education. Amounts are awarded on the basis of need, although determination formulae are so complex that it is impossible to predict, from one year to the next, which students will be eligible or how much each will receive. More than \$13 billion in federal Pell grants were awarded to 5.1 million students in 2003–04

for vocational, college and university education leading to “gainful employment in a recognized occupation.”

The program has been a target of some congressional criticism because of poor management controls that resulted in widespread abuse and fraud. Congressional investigators found evidence that some “diploma mills” had obtained Pell grants for nonexistent students.

(See also STATE SCHOLARS INITIATIVE.)

Penn, William (1644–1718) Quaker leader, founder of Pennsylvania and advocate of a religious toleration that permitted the establishment of schools throughout Pennsylvania early on. Born in London, the son of the powerful and wealthy Admiral Sir William Penn, the younger Penn was dismissed from Oxford and continually arrested for his espousal and public preaching of Quakerism. He nevertheless inherited his father’s fortune and a large claim upon the king for loans his father had made to the Crown. A trustee of the West Jersey Province, which included parts of present-day Pennsylvania, he was largely responsible for fair treatment of Indians there and, four years later, he and 11 other Quakers bought the proprietary rights to East Jersey in the Philadelphia area. Determined to establish a land of sanctuary and toleration for Quakers and other dissenters from traditional Protestant churches, he pressed his claim against the Crown in 1681 and was granted a charter giving him proprietary rights over the huge tract of land that he named Pennsylvania in honor of his father. Calling his new state a “holy experiment,” Penn was, from the beginning, intent on establishing an atmosphere conducive to tolerance and free education. “There is scarcely one thing,” Penn had written in “An Address to Protestants of All Persuasions” in 1679, “that so much needs the wisdom of the nation in the contrivance of a new law as the ‘education of our youth,’ whether we consider the piety or prudence of

our manners, the good life, or just policy of the government."

On his arrival in Pennsylvania, he drew up a Frame of Government that provided for complete religious liberty and the principle of universal public education. Although he envisioned the establishment of a provincial public school system, the irony of his principal of freedom of religion is that the Quaker practice of religion meant educating their children in their own churches, thus obviating the need for a state-run system of public education. Fearful that church schools would neglect secular education, he imposed an ordinance in 1683, requiring all parents and guardians of children to "cause such to be instructed in reading and writing, so that they may be able to read the Scriptures and to write by the time they attain to twelve years of age; and that then they be taught some useful trade or skill, that the poor may work to live, and the rich, if they become poor, may not want; of which every county court shall take care."

Penn did not spend all his time in Pennsylvania. He had been there in 1681 to found the province, meet with and befriend the Indians and lay out the city of Philadelphia according to the then-new grid plan, but in 1684 he returned to England. By then, Pennsylvania had attracted about 3,000 settlers. Although Penn and the Quakers generally opposed slavery and the state's schools were open to blacks, slavery remained legal in Pennsylvania. There were, however, few slaves in the state, simply because Quakers refused to own them.

After William and Mary's joint accession to the throne, Penn fell out of favor in London and was deprived of the governorship of Pennsylvania from 1692 to 1694. He returned to Pennsylvania in December 1699, leaving for the last time late in 1701. In the meantime, he left his affairs in the hands of an agent whose malfeasance ruined Penn. He was sent to debtor's prison in London and was about to sell

Pennsylvania back to the Crown in 1712 when a stroke rendered him helpless for the remaining six years of his life. His wife acted as proprietor of Pennsylvania from 1712 until she died in 1727. She was succeeded by her oldest son, John, who died in 1746, and his brother Thomas Penn, who remained proprietor until 1775.

Pennsylvania The second state to join the Union and, from the arrival of its first settlers, a wellspring of educational institutions. Although founded by William Penn and the Quakers, the first school in Pennsylvania was established by Swedish settlers in the early 1640s, at Tinicum. Penn obtained proprietorship of Pennsylvania in 1681, when he pressed the Crown to repay the loans his father, the wealthy Admiral Sir William Penn, had made to the king. Charles II settled the debt by granting the younger Penn a charter giving him proprietary rights over the huge tract of land that Penn then named in honor of his father.

Penn's original Frame of Government provided complete religious liberty and, together with a school ordinance of 1683, provided for the education of all children, including slaves and Indians. Ironically, freedom of religion proved counterproductive to secular education, because religious liberty, for the Quakers, meant educating their own children in their own meeting houses (the Quaker substitute for churches) and not allowing the state or others to do the job. Moreover, the primary thrust of Quaker education was in teaching children to "outstrip and exceed the world in virtue, in purity, in chastity, in godliness, and in modesty, civility, and in righteousness and in love." In practical terms, Quaker education meant indoctrination in the history and beliefs of the Society of Friends. It also meant harsh warnings against the corrupting influences of the world and, at the bottom of the list of priorities, a "guarded [secular] education."

Although Pennsylvania became the site for many schools during the colonial era, almost all were run by religious sects such as the Quakers, Mennonites, Amish, Dunkers and the like, and they taught little of either practical or academic value. The provincial assembly did entertain a proposal by one of its members to establish a system of state-run public schools in 1685, but they decided to reject it. Quaker schools were, however, open to all. Indeed, Pennsylvania's first "public" school was the Friends' Public School (now the private William Penn Charter School), founded in Philadelphia in 1689. By the mid-1700s, the Quakers had built about 50 meeting houses, of which 40 also served as schools. Although slavery was legal in Pennsylvania, Penn and the Quakers opposed slavery, and there were few blacks in the province. Penn and other Quaker leaders, however, had often enunciated the Quaker responsibility to proffer the Gospel to all human beings, including "Indians and Negroes, and all others." In Philadelphia, where most of the province's 3,000 blacks were concentrated, an English philanthropic society started a school for blacks in 1758, and Quaker teacher ANTHONY BENEZET established another in 1770.

As inward looking as it may have been, Quaker education nevertheless produced a thriving cultural and political center in Philadelphia. Unlike Puritan settlers in Massachusetts, who misused their powers by torturing and even burning those with different religious views, the Quakers, themselves the victims of vicious persecution, established a land and a city based on religious and intellectual tolerance. Although he was no Quaker, BENJAMIN FRANKLIN would probably have been unable to establish Franklin's Academy, the first secular school in the Americas, in any city other than the Quaker city of Philadelphia.

Although state leaders made tentative efforts to further the cause of universal public education, it was not until 1834 that the state

finally passed its Free School Act providing for the free education of all children by the state. The state has about 3,250 public elementary and secondary schools, with a total enrollment of about 1.85 million. More than 22% are minority students, and 14% live in poverty. Academic proficiency scores of Pennsylvania's public school students rank well above average of the nation—about 16th among the states. The state's private schools, including the many Friends' (Quaker) schools (see FRIENDS, SOCIETY OF), educate about 350,000 additional students. In higher education, the state has 44 public four-year institutions and 21 public two-year colleges. Pennsylvania State University and the University of Pittsburgh each have four campuses, and the Pennsylvania System of Higher Education has 14—all of them four-year colleges, including several former teachers' colleges. There are 107 private four-year colleges and universities and 90 private two-year schools. Graduation rates at four-year schools average 62.2%. Among the renowned four-year schools are Bryn Mawr, Dickinson, Franklin and Marshall, Haverford, Lafayette and Swarthmore Colleges; Bucknell, Carnegie-Mellon, Lehigh, Temple and Villanova Universities; and the University of Pennsylvania, a private, independent university, whose origins lie in an academy founded in Philadelphia by Benjamin Franklin in 1751.

(See also COLLEGE OF PHILADELPHIA.)

Pennsylvania Association for Retarded Children v. Commonwealth of Pennsylvania (PARC decision) A landmark 1971 U.S. Supreme Court case that extended universal public education laws to retarded children as a constitutional right. The plaintiffs argued that all mentally retarded children can benefit from an educational program of some kind. In guaranteeing by law free public education to all children between the ages of six and 21 (then the age of majority), the state, they said, must

provide such education to mentally retarded children. In a consent agreement reached without an actual Court ruling, the state agreed it had violated Fourteenth Amendment rights to due process by singling out and denying one segment of the population—namely, retarded children—access to a service (education) guaranteed to the rest of the people. It therefore agreed to place mentally retarded children in appropriate, free, public education programs.

The *PARC* decision was the first in a pair of Supreme Court cases that challenged the constitutionality of denying specific groups of children access to free public education, for which all the people were obliged to pay. In a second case a year later, *MILLS V. DISTRICT OF COLUMBIA BOARD OF EDUCATION*, the Court ordered the Board of Education of the District of Columbia to provide free and appropriate public education to children with mental, physical or emotional disabilities and handicaps. Together, *Mills* and *PARC* spurred congressional passage of the Education for All Handicapped Children Act of 1975.

percentile In education, an evaluation mechanism for determining the distribution of student scores and grades, with the percentile, on a scale of 1 to 100, representing the percentage of scores or grades at or below that level. Thus, if 60% of a class obtain raw scores of, say, 75% or lower in a test, a raw score of 75% is in the 60th percentile. Obviously, a score of 100% would necessarily fall in the 100th percentile, but any score on any grading scale may fall in any percentile, which merely represents the percentage of students whose scores were at or below that level. A score of 75% or 85% might fall in the 100th percentile if all scores in the class were at or below that level. A score of 500 on *SCHOLASTIC ASSESSMENT TESTS*, which are used as college admission tests and scored on a scale of 200 to 800, represents the 50th percentile, with half the students who take the tests

scoring at or below that level. Percentiles are useful to teachers in comparing individual and class scores with achievement norms in standardized tests, as well as evaluating the reliability of classroom tests.

perceptual disorder A vague, “catchall” phrase referring to the difficulty or inability of an individual to absorb new information through normal sensory stimuli. The causes may be neurological, physical or psychological, and the disorders may be temporary or long-term. Children and adolescents are subject to developmental differences and mood swings that can often divert their attention from classroom activities. Although perceptual disorders of any kind, no matter how temporary, can interfere with the learning process, the term remains a dangerous one because of its vagueness and the possibility of its misuse in school records and in student placement.

perennialism An educational philosophy that all necessary education can be found in so-called eternal (“perennial”) truths expressed in classical works of literature, philosophy, history, art, science, mathematics, and so on. Perennialism as a philosophy, developed in the 15th and 16th centuries, when European educators rediscovered the great literary works of ancient Greece and Rome and added them to the academic curriculum. In the United States, perennialism is embodied in the *GREAT BOOKS PROGRAM* developed in 1947 by *UNIVERSITY OF CHICAGO* president *ROBERT M. HUTCHINS* and his presidential assistant, philosophy professor *MORTIMER J. ADLER*. A variation of the traditional *CLASSICAL EDUCATION* curriculum, the *Great Books Program* includes what its editors deem to be the collective wisdom of the Western world.

performance-based education See *COMPETENCY-BASED EDUCATION*.

performance contractor An entrepreneurial organization or outside agency hired by public schools and school districts to improve student achievement in one or more specific areas. Performance contractors range from individual tutors for remedial reading and mathematics to private SCHOOL MANAGEMENT COMPANIES that take over operations of an individual school or school district. Payments often hinge on the contractor's achieving specified results.

Performance contracting in the public education sector began in the 1970s, when the OFFICE OF ECONOMIC OPPORTUNITY began funding specialized reading and mathematics instruction to culturally and economically deprived students in public schools. Although initial results were mixed, the practice spread nationwide by the late 1980s as public schools found it more economical to award contracts tied to specific results than to hire full- or part-time teachers with no guarantee of student improvement. In the most far-reaching examples of performance contracting, some school districts and cities turned over the management of entire schools and even entire school systems to private school management companies. Between 1969 and 1972 more than 200 school districts contracted with private groups to provide remedial instruction to low-income students. In 1993, the Hartford, Connecticut, and Baltimore, Maryland, public school systems went a step further, with Baltimore contracting with Educational Alternatives, Inc., a pioneer performance contractor, to take complete control of nine failing inner-city public schools. Hartford contracted with the company to manage all 32 public schools in that city. In exchange for agreed-upon per-student fees—usually equal to the average cost of educating each student in the public schools of that city—Education Alternatives guaranteed to raise average student test scores a grade level or higher within a specified number of years. After

only two years, however, average student academic achievement remained relatively unchanged, and both Hartford and Baltimore eventually canceled their contracts. By early 2000, the company was facing financial difficulties, as the number of schools it managed across the country dwindled to about 37 pre-schools and charter schools, with a total of about 2000 students.

Two other performance contractors continued thriving, however: Edison Schools, Inc., a part of the EDISON PROJECT, which had opened nearly 100 schools serving 37,000 students in 17 states and the District of Columbia; and Mosaica Education, Inc., founded in 1997, with eight charter schools in Michigan, New Jersey and Pennsylvania.

The concept of performance contracting has come under constant attack by teachers' unions and by some educators. The Twentieth Century Fund, a nonprofit research group, studied academic results of more than 200 districts served by private contractors and found that "in none of these sites did performance contracting meet its promises to improve students' test scores. . . . In some cases its students did less well than corresponding groups of control students. On the basis of a wide range of evaluations that have already been done, the outcomes and cost reductions that were promised have not materialized." Teachers unions agree, charging that school districts turn to performance contractors only for union-busting and reducing overall costs, rather than to raise student academic performance. Baltimore, for example, planned turning three elementary schools over to Edison and Mosaica in 2000—even after Education Alternatives had failed to lift student performance in nine other schools. A school takeover by a performance contractor automatically voids any previous collective bargaining agreement at the school between teachers, staffers and the school board. Teachers and other staffers who want to remain at

such schools must reapply to the performance contractor, with no guarantee they will be hired, and each new hire must renegotiate his or her salary individually.

(See also ENTERPRISE SCHOOLS.)

performance tests Any of a wide variety of nonverbal, nonwritten tests to gauge the relative intelligence of individuals with impaired literacy skills. These include preschoolers who are too young to read or write; handicapped students who cannot see or hear; students with reading or learning disabilities; and foreign or culturally disadvantaged students who do not speak, read, write or understand English.

performing arts education The formal study of instrumental music, drama and ballet. Most common in college and graduate school, performing arts education in the majority of public elementary and secondary schools is limited to extracurricular activities involving drama societies and school orchestra and marching bands and other musical groups. Some states and cities sponsor public MAGNET SCHOOLS that specialize in performing arts education for gifted and talented students who must gain admission by auditioning successfully.

Perkins Loans Federally subsidized loans to the neediest university students. Officially called Federal Perkins Loans, the amounts loaned to students and the interest rates (lowest of all education loans) can vary from year to year, depending on annual congressional appropriations. Named for their originator, education advocate Senator Carl D. Perkins (D, Ky.), Perkins Loans entail no origination fees or insurance premiums, and interest (the lowest of any loans for education) does not begin to accrue until nine months after the completion of the student's education. Federal Perkins Loans allow students to borrow as much as \$4,000 a year, up to a maximum of \$20,000,

for undergraduate study, and as much as \$6,000 a year, up to a maximum of \$40,000, for graduate study. The government had been disbursing more than \$1 billion a year in Perkins Loans, or an average of \$1,500 per student until 2006, when President George W. Bush eviscerated the program by cutting \$12.7 billion from student loan subsidies in his education budget.

Perkins Vocational Education Act A far-reaching federal law proposed by Senator Carl D. Perkins (D, Ky.) and passed in 1984 that provided almost \$1 billion a year in aid to the states for five years to expand and improve vocational education. An amendment, expansion and improvement of the VOCATIONAL EDUCATION ACT OF 1963, the 1984 law required the states to make vocational education available to all persons, including the handicapped, the culturally and educationally disadvantaged, and the incarcerated. It also provided funds to support career guidance and counseling and establish industry-education partnerships in cooperative education.

PERT An acronym for Program Evaluation and Review Technique, a widely used tool for planning complex educational projects by graphically depicting the various elements of the project and their interrelationships. Often called a flow chart or critical path method, PERT provides political planners, engineers, architects and school administrators with details of, and the sequence of, all the events and activities leading up to the successful completion of projects ranging from new elementary schools to huge university complexes.

Pestalozzi, Johann Heinrich (1746–1827) Swiss educational reformer whose pedagogy revolutionized education in western Europe and the United States. Educated at the University of Zurich, he was deeply influenced by the

works of Swiss-born philosopher-author JEAN-JACQUES ROUSSEAU, whose novel *Emile, ou l'Education* (1762) presented a new theory of education based on the principles of natural child development and the futility of attempting to treat children as small adults. In the novel, the boy Emile learns by experience and natural observation, using his senses to acquire new knowledge and skills as he becomes developmentally ready. Pestalozzi attempted to apply the educational techniques described in *Emile* to real life. In 1775, he opened a school on his estate for poor children, who would ordinarily have gone uneducated.

After five years of experimenting with "Emilian" educational methods, he closed the school for lack of funds and, apparently, because he had failed to make much progress in educating the children. Pestalozzi learned a great deal from observing his students, however, and he spent the next 20 years isolated on his estate, formulating new theories of education. He eventually wrote two books: *The Evening Hours of a Hermit* (1781) and *Leonard and Gertrude* (4 vols., 1781–85), a novel he used to present his theories on social reform through education.

In 1798, he established a school for orphans at Stans. It, too, failed after a few months, and the following year he opened another school, this time admitting wealthy as well as poor children. In the unstable, revolutionary atmosphere of Europe, families from everywhere on the Continent sent him their children for safekeeping in the rural haven of Yverdon, and his third school proved an enormous success. Pestalozzi abandoned most traditional teaching methods and, most especially, the use of pain and punishment to motivate students in class. He stressed the individuality of the child, teaching his teachers to recognize developmental differences rather than trying to implant knowledge arbitrarily whenever the teacher decided it was time to learn a particular skill. Thus, the school

allowed each child to learn at his or her own ability level. In each learning experience, children went from the concrete to the abstract, first working with blocks before working with numbers, for example, and, with gentle encouragement and guidance from teachers, using their senses and powers of observation to come to conclusions.

The experiment, which lasted 20 years and constantly tested new pedagogical techniques, proved remarkable socially as well as educationally. For the first time in Western education, rich and poor children, boys and girls, mixed quite happily, and all the girls reached the same academic levels of achievement as the rich boys. The academic successes of the poor children and the girls astonished Western educators and social leaders, who believed deeply in the religious notion of predestination, with God ordaining who shall be rich and poor, man or woman, noble or ignoble and therefore capable of being educated. Pestalozzi proved all children capable of being educated, regardless of class or gender. Pestalozzi concluded from his work that churches should be stripped of educational functions and that education should be turned over to the state and emphasize citizenship in a just and ordered society rather than emphasizing religion. Pestalozzi's success brought educational leaders and social leaders swarming to Yverdon. Both HORACE MANN and HENRY BARNARD visited Yverdon and carried Pestalozzian theories back to New England to establish the first state public school systems and teacher training schools in the United States. Pestalozzi influenced virtually every other 19th-century American educational reformer, including CATHERINE BEECHER, MARY LYON, FRANCIS W. PARKER, EDWARD A. SHELDON and EMMA WILLARD, all of whom adopted Pestalozzian education in the schools they founded.

Peterson's A major publisher of school and college guides, software packages and CD-ROM

databases. *Peterson's Guide to Independent Secondary Schools* is one of the definitive guides to accredited American private secondary schools. Available in most book stores, it offers complete profiles of about 1,500 institutions, including student characteristics, facilities, costs, subjects offered, graduation requirements, special academic programs, range of extracurricular activities and college placement records. Peterson's also publishes definitive guides to four-year colleges in both national and regional editions, as well as guides to two-year colleges, software and on-line guidance for selecting colleges and distance learning programs, obtaining financial aid and myriad other guides to education and educational services.

petty school The most elementary level of education in the colonial era in England and the American colonies. Peculiarly English, petty schools were either religious or secular in character, but all taught the basics of reading, writing and calculation. Church-associated petty schools, taught by Anglican priests, were religious in character and generally prepared students "to say, to sing and to read" for service in the church as choir boys or altar boys. Secular petty schools simply gave students the necessary reading, writing and calculating skills to qualify for apprenticeships in commercial life. Although primary in nature, petty schools differed from the grammar schools of the period, which prepared students for advanced studies at the academy and eventually college levels. The education offered at petty schools was an end in itself. The delineation between the various kinds of primary and secondary education was, however, vague, and petty school education did not automatically lock students out of advanced schools.

In the colonial era, however, most formal education was religiously oriented and designed to prepare students for service in the church as ministers. Formal schooling was, therefore, not

the essential ladder to secular success that it became in the modern era. Indeed, many of the intellectual, cultural, political and social leaders of the era were self-educated—not the least of whom included BENJAMIN FRANKLIN and THOMAS PAINE. Even in the early 19th century, self-education was as prized as formal education. The first petty schools in the American colonies were established under the Massachusetts School Act of 1847, requiring all towns with 50 or more families to "appoint one within their town to teach all . . . children . . . to write and read. . . ." Some towns created grammar schools, the precursors of traditional American elementary schools, while others created petty schools. Some of the latter were "DAME SCHOOLS," taught for a fee by a literate mother in the kitchen of her home. Others were held in churches, manses or private homes by local ministers or itinerant teachers.

Phi Beta Kappa The first Greek-letter FRATERNITY in the United States and now the most prestigious academic HONOR SOCIETY for college juniors in the top 7.5% of their classes academically and seniors in the top 10%. Phi Beta Kappa was founded at the COLLEGE OF WILLIAM AND MARY on December 5, 1776, by a group of students that included George Washington's nephew, the future U.S. Supreme Court justice Bushrod Washington. Originally a fiercely political debating society for Tories and advocates of independence, it extended its functions after the Revolutionary War to enrich the social lives of its members.

Like earlier literary societies without Greek-letter names, Phi Beta Kappa represented an attempt by students to assert their rights of assembly, free speech, independent decision and other newly won individual and political freedoms of which they had been deprived by autocratic tutors at strict, British-style colonial schools and colleges. To distance themselves from their tutors, members of Phi Beta Kappa

and the Greek-letter societies that followed adopted a variety of secret rites, including secret oaths, secret codes of laws, secret initiation ceremonies, Greek and Latin seals and mottoes and even secret handshakes. Phi Beta Kappa also adopted a badge or key, which members wear to this day.

In 1781, two years after granting charters to Yale and Harvard Universities, the original Phi Beta Kappa was forced to dissolve after British troops invaded Tidewater, Virginia, and disrupted life at William and Mary. The chapter was not revived until 1851. In 1875, the University of Vermont chapter admitted the first two women, thus converting it from a social fraternity into an honor society for students graduating college with high academic honors, outstanding character and other achievements. New members are elected by Phi Beta Kappa members on the faculty of their colleges, and they can become members only at colleges that have Phi Beta Kappa chapters. In the early 1990s Phi Beta Kappa had about 250 chapters, with a living membership that ranged between 350,000 and 400,000.

Phi Delta Kappa (PDK) A professional fraternity of well over 100,000 educators and graduate students of education founded in 1911 originally to encourage young men and women to enter the field of education. The organization traces its origins to a 1906 meeting of college deans who were lamenting the shortage of teachers in the United States and the difficulty of luring college graduates into so low-paying a profession. In 1910, the deans of the colleges of education at the universities of Missouri and Indiana and at Teachers College Columbia University each founded what later became PDK chapters to recognize and honor students of education planning to enter teaching. In 1906, the three chapters merged into a single organization that later founded chapters at schools of education across the United States.

As the number of teachers expanded, PDK's mission gradually changed to one of promoting quality education in the United States. To that end, it publishes the monthly *Phi Delta Kappan*, one of the most respected scholarly journals in the field of education; the newsletter *News, Notes and Quotes*; and *Application of Research*, a quarterly research document. PDK also publishes *PDK Fastbacks*, an ongoing series of brief, authoritative booklets in digest-magazine form with overviews of a wide range of current and historical aspects of education.

Philadelphia Pennsylvania's largest city, the nation's fifth largest, and once the intellectual, cultural and political center of the English colonies and the young American republic. First settled by Swedes in the 1640s, Philadelphia was part of the huge land grant of Charles II to WILLIAM PENN and was settled by Quakers. In 1683, it became the capital of Pennsylvania, a status it retained until 1799. The city had grown to more than 10,000 residents in 1729, when BENJAMIN FRANKLIN arrived from Boston to begin publishing the *Pennsylvania Gazette* and assume the most influential role in developing the city's intellectual life and making Philadelphia the cultural center of the British colonies. In the course of the next dozen years, he founded the first free library in the colonies, the first learned society—the AMERICAN PHILOSOPHICAL SOCIETY—the first volunteer fire department and the first police force, and he was responsible for helping found the first hospital in the colonies.

In education, Franklin was an outspoken advocate of secular, universal public education, and his 1749 *Proposals Relating to the Education of Youth in Pennsylvania* created a storm of controversy and turned Philadelphia into a center of educational debate—and innovation. Indeed, in 1749, he obtained pledges from more than 50 prominent citizens to found the secular Public Academy of the City of Philadel-

phia, which later became the College of Philadelphia and, eventually, the University of Pennsylvania. Unlike other academies and colleges in the colonies, it offered no courses in religion and theology and concentrated, instead, on practical courses essential to men building a new nation. Opposed to Franklin were the churches and their supporters who believed in traditional, elitist education reserved for the nobility and landed gentry.

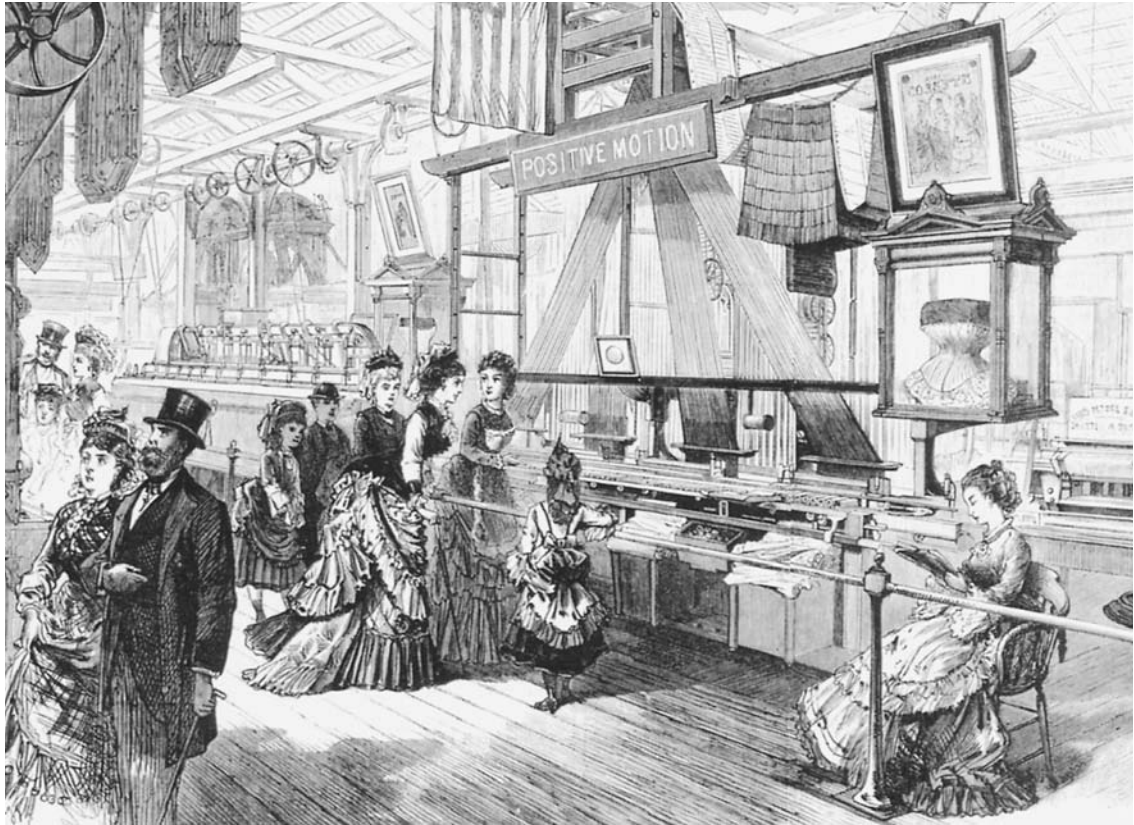
By the 1850s and 1860s, however, Philadelphia had turned into a center of international commerce, and it was the chief port of entry for immigrants from western Europe and the British Isles. Its population had reached nearly 40,000, and as many as a dozen languages could be heard in its markets and along its wharves. Whites, Indians and blacks mingled freely along its streets, and most sought education for their children. Quaker schoolmasters were all too willing to oblige. There were at least two schools for blacks founded during the Franklin era, one by ANTHONY BENEZET, the other by an Anglican missionary society. As the most populous and centrally located city in Britain's North American colonies, Philadelphia inevitably became the center of the intellectual, social and political ferment that led to the American Revolution. Because of its centrality, the nation's founders signed the Declaration of Independence and drafted the Constitution in Philadelphia and made it the nation's first capital. A century later, it hosted the Philadelphia Centennial Exhibition.

With a population of nearly 1.5 million, Philadelphia remains one of the nation's cultural and educational centers. In addition to the University of Pennsylvania, Philadelphia is the site of Drexel, Temple, La Salle and Thomas Jefferson Universities, the Curtis Institute of Music, the University of the Arts and Moore College of Art and Design. The city is a world center for art and music. The Academy of Music is home to the famed Philadelphia Orchestra.

The Philadelphia Museum of Art and the Rodin Museum are among the finest museums in the United States, while the Pennsylvania Academy of Fine Arts, which houses an art school as well as an art collection, is the oldest art museum in the United States, founded in 1803 by a group that included the famed portraitist of the American Revolution, CHARLES WILLSON PEALE. The Academy of Natural Sciences (1812) is the oldest U.S. museum for the natural sciences and the Franklin Institute (1824), the oldest science and technology museum.

Philadelphia Centennial Exhibition An international exhibition organized in Philadelphia in 1876 to mark the centennial of the Declaration of Independence. Ostensibly organized to teach the world about Americans, it was perhaps even more successful in teaching Americans about the world and the industrial and scientific advances that were about to change their lives. Most significantly, the exhibition was responsible for introducing modern VOCATIONAL EDUCATION to the United States. Instead of the single massive structure of previous exhibits in other countries and in New York, the Philadelphia Centennial housed 30,000 exhibits in 167 buildings scattered across a 236-acre site. In addition to buildings housing exhibits from 35 participating foreign nations, there was a Machinery Hall, an Agricultural Hall, a Horticulture Hall, a Memorial Hall for fine art and the "Main Building," housing exhibits of U.S.-manufactured products and educational and scientific advances including the Morse telegraph, the Singer sewing machine, the McCormick reaper and the Colt revolver.

The centennial also featured fireworks, concerts, dances, athletic events, livestock shows and other entertaining events, but, in an era when fewer than 10% of Americans ever experienced secondary education, the centennial proved one of the most important educative



Philadelphia Centennial exhibits taught Americans about the industrial advances that would soon change their lives. (Library of Congress)

experiences of its day. "The culture obtained by the millions of our people who have found in the fair a mine of information and suggestion, must have a beneficial effect upon the national character," wrote John D. McCabe in *The Illustrated History of the Centennial Exhibition* (1876). McCabe wrote:

A tour through the halls and grounds was like a journey around the world, giving insight into the life and thought of all manner of men. . . . Apart from this general and cosmopolitan culture in which all participated, each found valuable fruits of knowledge adapted to his own need. The farmer

saw new machines, seeds and processes; the mechanic the ingenious inventions and tools, and products of the finest workmanship; the teacher, the educational aids and systems of the world; the man of science, the wonders of nature and the results of the investigations of the best brains of all lands. Thus, each returned to his home with a store of information available in his own special trade or profession.

The exhibition was most significant, however, in its introduction of modern vocational education to the United States. As it happened, a number of American educators had been

searching for a new method of industrial education to replace what they considered to be the inefficient system of apprenticeships. Such a method had already been discovered in Russia, and it was demonstrated in the Russian exhibit by its creator, Victor Della Vos, founder and director of the Moscow Imperial Technical School. What Della Vos had done was dissect vocational skills into their constituent elements, then organize them and teach them in ascending order of difficulty in the institute's own instruction shops, equipped with machinery on which students could practice and hone their new skills.

For Massachusetts Institute of Technology President John D. Runkle and his colleagues at the centennial, the Della Vos exhibit was a revelation that held "the philosophical key to all industrial education," and Runkle became the champion of its eventual introduction into what became the manual training schools that spawned vocational education in American public schools.

philanthropy See COLLEGE FUNDING; FOUNDATION; PRIVATE SCHOOL; SCHOOL FUNDING.

philosophy The pursuit of knowledge and wisdom by speculative reasoning rather than by scientific means. Derived from the Greek *philosophia*, meaning "love of wisdom," philosophy and the idea that knowledge is worth pursuing for its own sake date from Greece of about the sixth century B.C. Philosophy initially comprised the study of all the arts, sciences and religion. As each area of study grew more complex, philosophy was divided into a variety of categories. Educators in 17th- and 18th-century England and the American colonies divided philosophy into what they described as the three Aristotelian divisions: natural, moral and mental philosophy. The teaching of MENTAL PHILOSOPHY as an independent course quickly disappeared in favor of more concentrated courses

in its constituent elements: logic and mathematics and the various branches of mathematics. Natural philosophy and MORAL PHILOSOPHY, however, remained essential elements of the academic and college curriculum throughout the colonial era and the first half of the 19th century. Moral philosophy dealt with the ethical and theological rules for a happy life, while natural philosophy was a catchall title for study of what little was known about the physical sciences, botany and physics at first, and later chemistry and biology.

Natural philosophy as a single course disappeared as advances of scientific knowledge in the 18th and 19th centuries extended its scope and necessitated its division into constituent parts: botany, biology, chemistry and physics. By the mid-19th century the term had disappeared from the curriculum.

Moral philosophy, on the other hand, had become an integral part of colonial religious instruction and was, in effect, the philosophy of Protestant Christianity. Many early Protestant ministers and their congregants in the colonies had been religious and political dissenters. Unlike their Anglican counterparts in England who used the arguments of moral philosophy to preach acceptance of predestination as the basis of a happy, moral life, many Protestant dissenters in the colonies used it to argue against the supremacy of the Church of England and the Crown. Indeed, moral philosophy as taught in some colonial institutions helped sow the seeds of revolution by expressing the idea that all men were created in the image of God—not just the nobility. The development of secular, state-run public school systems and the secularization of colleges in the last half of the 19th century pushed religious education out of most classrooms and into specialized theological seminaries. The moral philosophy courses that remained in secular education gradually evolved into the elements of today's social and political science curriculum.

The philosophy now taught under that name in modern institutions bears little resemblance to the courses taught 150 or more years ago. Rarely taught at the secondary school level, philosophy is generally divided into four segments: metaphysics, the study of reality; epistemology, the study of the origins, validity and limits of knowledge; ethics, the study of morality; and aesthetics, the study of the nature of beauty. Ironically, only about 300 Ph.D.s, or less than 1% of all “doctor of philosophy” degrees, are awarded to students of philosophy.

phoneme A linguistic term representing the symbol for a single speech sound—e.g., “s,” as in site, sea, place or answer. Phonemes do not correspond to spellings but to sounds, and they may or may not correspond to actual letters—as, indeed, the phoneme “s” does not correspond to the spelling of the “s” sound in place. There are 45 phonemes in the English language.

phonetics The study and systematic classification of the sounds of spoken languages and the application thereof to language study. There are three segments of phonetics: articulatory phonetics, or the production of sound by the speech organs (lips, tongue, teeth, throat, vocal cords, etc.); acoustic phonetics, or the effects of sound on the external environment (air, walls, etc.); and auditory phonetics, or the effects of sound on human auditory mechanisms and ultimate perception by listeners.

phonics A technique of teaching beginning reading by helping students associate a sound with each letter of the alphabet or letter combination, then “sounding out” complete words, letter by letter. In more technical terms, phonics first teaches students phonemes, or single speech sounds, and then teaches them to associate each phoneme with one or more graphemes or written representation of phonemes. Having mastered the sound of each grapheme,

they can then “sound out” the graphemes of each word, one by one, slowly at first and finally fast enough to blend them into the single sound of a complete word—as in “s,” “i,” “t.”

phonograms Letter groupings that produce the same sound in all the words in which they appear—e.g., all, in ball, call and fall. A letter grouping such as ough is not considered a phonogram because of the variety of ways in which it can be pronounced: e.g., cough, rough and though. There are at least 150 different phonograms that are useful (as well as entertaining) in rhyming exercises for early reading and writing instruction.

physical education Instruction in a variety of physical exercises and activities to develop physical fitness and muscular coordination. Physical education is a required part of the elementary school curriculum in most American public schools, from kindergarten through eighth grade. Only four states require it through all 12 grades. About 98% of American public school students are enrolled in physical education through fifth grade, but only 43% are enrolled by the time they reach twelfth grade. As a result, less than 50% of American adolescents are not engaged in “appropriate physical activity” according to U.S. Department of Health and Human Services studies, which recommend a minimum of 20 minutes vigorous physical activity at least three times a week for all youngsters under 18.

The nature of physical education varies according to the age of participants. In early age groups, students generally participate in a variety of games and activities that integrate running, climbing, jumping, crawling, swinging, twisting and stretching. In successive years physical education is expanded to include such activities as bouncing, kicking, catching balls, jumping rope, dance, gymnastics, aquatics and, ultimately, organized sports.

Physical education traces its roots back to ancient Greece, where as early as 500 B.C., free Greeks and their children socialized and participated in physical and intellectual exercises at outdoor exercise grounds called gymnasiums. Deemed essential to the unity of the total being, exercise was also important for keeping young men fit for service in wartime. Physical education was an integral part of education at both Plato's ACADEMY and Aristotle's LYCEUM. Physical education disappeared from the curriculum in Rome and throughout the early Christian era, when the Catholic Church assumed control of education and limited it largely to theological training. It reappeared in the 16th century when German humanists emancipated education from church control by building their own schools, which they called *Gymnasien*, in reference to the traditional secular arts taught in ancient Greece. The word became the standard German word for any secular, nontechnical secondary school specializing in the traditional liberal arts. Ironically, it had no association with physical education, but Americans misunderstood its meaning and named their exercise halls GYMNASIUMS.

Meanwhile, individual tutors introduced physical education to the general educational program for boys in 16th-century England. In 1687, English philosopher JOHN LOCKE recommended the inclusion of dancing, fencing and horsemanship in every boy's curriculum, as outlined in his influential work *Some Thoughts Concerning Education*. In the American colonies BENJAMIN FRANKLIN included physical exercise in the standard curriculum in his *Proposals Relating to the Education of Youth in Pennsylvania*, published in 1749. Many early American educators such as CATHERINE BEECHER also introduced regular exercises and calisthenics into the curricula of their own schools, and by the end of the 19th century almost all private boys' schools required students to participate in sports.

Physical education did not appear in public schools until the late 1880s, when Dr. LUTHER GULICK developed the first modern physical education curriculum of American public schools. With Robert J. Roberts, the inventor of body building, Gulick put together a program of "safe, easy, short, beneficial and pleasant" exercises and games, including one that he helped his Canadian-born student James Naismith invent—basketball. Like other elements of the program, basketball was designed as a physical education activity that was easy to learn for all age groups, playable indoors and out, free of violence and conducive to all-around development. Known as the "father of physical education" in the United States, Gulick spent 17 years, beginning in 1885, developing a physical education curriculum and inspiring the construction of gymnasiums, swimming pools, physical education programs and athletic leagues in YMCAs across the United States.

In 1903, Gulick became director of physical education of the New York City public schools for three years, during which time he introduced and integrated physical education and hygiene instruction into the curriculum and organized the Public School Athletic League. In 1906, he helped found the Playground Association of America, which made public playgrounds, where preschool children could exercise, a nationwide objective and, eventually, a ubiquitous element of every public park in the United States.

Piaget, Jean (1896–1980) Swiss scientist whose studies of child development altered education by proving that children pass through specific stages of intellectual development that limit what they can learn at each stage. Although many educators had theorized much of what Piaget proved (in more than 50 books), most teachers in the early 1900s approached their young subjects as if they were small adults to

whom one simply imparted knowledge in the expectation that it would be absorbed and retained. Failure was seen as the result of stubbornness, insubordination or evil intent. Piaget also developed the first theory of cognitive functioning, outlining the complex process of how a student learns and assimilates new information (see *COGNITION*.). His work helped shape the preschool and elementary school curriculum, which is now shaped according to age-based readiness to learn. Thus, the basics of reading and writing instruction, once taught in first and second grade, now begin in *KINDERGARTEN*, or, as it is often called, pre-first grade, when youngsters reach an age (five years old) and level of intellectual development most conducive for acquiring those skills. Postponement of such instruction until first or second grade often leaves students with inadequate reading and writing skills that remain perennially below appropriate levels for their age, even when they reach adulthood. Acceptance of Piaget's theory of cognition eventually led to federal government establishment of the *HEAD START* program that brought preschool education to millions of deprived children who might otherwise have been unable to afford such education.

Pickering v. Board of Education of Township High School A 1968 U.S. Supreme Court decision that public school teachers could not be dismissed for publicly criticizing school systems—even if some of the charges they made were wrong. It thus reversed lower court decisions that had upheld the firing of Marvin L. Pickering by the Lockport Township, Illinois, school board for sending a letter to a local newspaper criticizing a proposed school tax increase. The Court held that the letter had not “impeded the teacher’s proper performance of his daily duties in the classroom or interfered with the regular operations of the schools generally.” The Court ruled that, “absent proof

of false statements knowingly or recklessly made by him, a teacher’s exercise of his right to speak on issues of public importance may not furnish the basis for his dismissal from public employment.”

Pierce, John D. (1797–1882) American educator responsible for founding Michigan’s system of public education. Born in New Hampshire and educated at *BROWN UNIVERSITY*, he studied for the ministry at Princeton Theological Seminary and in 1831 joined the American Home Missionary Society, which sent him to Marshall, Michigan, with other missionaries to catechize and educate frontier children. Like *HORACE MANN*, the “father” of public education and founder of the first state public school system in Massachusetts, Pierce was a strong advocate of public education. Pierce’s concept of public education went beyond Mann’s, however. Mann ignored higher education and saw state responsibility for education ending with the establishment of public primary and secondary schools to give youngsters the intellectual equipment to preserve self-government and American liberty.

Pierce, on the other hand, saw the state’s responsibility as all encompassing. In Michigan he met Isaac Carey, also a New Englander, who became Michigan’s first congressman and was chairman of the Michigan constitutional convention’s education committee. Together with Carey, Pierce drew up the articles on education in the state’s constitution that made Michigan the first state responsible for providing a universal system of education, with public, primary “common” schools, free high schools, town libraries, a university, an agricultural school and special institutions for the deaf, dumb and blind. Pierce served as Michigan’s first state superintendent of public instruction from 1836 to 1841 and organized the state into school districts and wrote school laws that governed the length of schooling and estab-

lished teacher qualifications. He also drew up plans for a state primary school system, helped establish the University of Michigan and established a board of regents to govern the entire educational system. He returned to the ministry in 1841 but was elected to the state house of representatives in 1847 and served just long enough to ensure establishment of the state's first teacher training school (now Eastern Michigan University), in Ypsilanti, where he gave the dedicatory address in 1852 and retired a year later.

Pierce v. Society of Sisters A landmark 1925 decision by the U.S. Supreme Court that ruled unanimously that a 1922 Oregon law requiring children to attend public schools was unconstitutional. The law resulted from legislative pressures by a coalition of Protestant fundamentalist groups that opposed the increase in the number of eastern European immigrants and consequent growth in the number of Roman Catholic schools. The coalition persuaded the legislature to pass a law requiring all children between the ages of eight and 16 to attend public, Protestant-oriented schools. Before the law could take effect, the Society of Sisters, which operated Catholic schools, obtained an injunction against the state. The Court upheld the injunction, ruling that the law was unconstitutional because it would have deprived private and religious schools of their property without due process. In addition, the court held that the law interfered with "the liberty of parents and guardians to direct the upbringing and education of children under their contro. . . . The fundamental theory of liberty upon which all governments in this Union repose excludes any general power of the State to standardize its children by forcing them to accept instruction from public teachers only. The child is not the mere creature of the state. . . ."

The Court did, however, affirm the state's right to "regulate all schools, to inspect and

examine them, their teachers and pupils; to require that all children of proper age attend some school . . . that certain studies . . . be taught," but it added that the state could not eliminate such institutions.

pietism Originally, a movement that split the German Lutheran Church of the 17th and 18th centuries into so-called Old Light and New Light factions that differed over the role of the church as an intermediary between man and God. Not unlike Quakers in outlook, pietist Lutherans were the first German settlers in Pennsylvania in the 17th century and believed strongly in secular education. When transplanted to the American colonies, however, the pietist movement spread to other major Protestant religions, including Congregationalism and Presbyterianism. Pietism split these other churches into Old Light church loyalists and New Light pietists who believed that Godliness and grace must come from within through a personal "conversion" rather than through the rituals of an organized church. Initially, pietism divided not only the churches but also their educational institutions. The result was a near-doubling of the number of churches and religious colleges.

Eventually the pietists themselves split, with the most fundamentalist pietists helping to spawn the GREAT AWAKENING and the evangelical, fundamentalist Christian movement. Pietism derives its name from the *collegia pietatis*, or devotional meetings held by Philipp Jakob Spener (1635–1705), a pastor and president of the Lutheran Church of Frankfurt am Main. At his meetings, he suggested that religious faith must be generated from within and cannot be imposed by the formal teachings of the church. Participants remained tied to their church but added individual Bible study and group discussions to their traditional worship, and the practice quickly spread throughout Germany.

(See also NEW LIGHT-OLD LIGHT CONTROVERSY.)

Pimsleur Language Aptitude Battery A complex group of measuring devices of the 1960s and 1970s to determine whether a student had sufficient aptitude in foreign languages to warrant enrolling or continuing such studies. The battery consisted of six elements whose scores were combined to provide a total final score: a grade point average of a student's grades in English, social studies, mathematics and science; a vocabulary test requiring translation of 24 English words into the foreign language; a language analysis test requiring translation of English sentences into the foreign language; a sound discrimination test; a sound-symbol association test; and an interest assessment test.

Like most aptitude tests, Pimsleur was often proved invalid in that, instead of measuring aptitude, it simply reflected the economic and cultural development of a student and, by preventing the student's enrollment in foreign-language courses, became a self-fulfilling prophecy. Virtually all academically progressive public and private schools now routinely enroll all fourth-grade students in foreign language instruction, while middle schools, high schools and colleges rely on achievement tests to determine the placement of students in slower or more advanced sections of foreign language courses.

Pintner General Ability Tests A once-ubiquitous battery of aptitude tests routinely given each year in the 1930s, 1940s and 1950s to measure academic aptitudes of students in all grades, from K through 12. Developed in 1923, the tests had four components: the Pintner-Cunningham Primary Test for students in grades K-2, the Pintner-Durost Elementary Test for grades 2-4, the Pintner Intermediate Test for grades 5-8 and the Pintner Advanced Test

for grades 9-12. Because of their tendency to reflect the economic and cultural backgrounds of children and serve as self-fulfilling prophecies, aptitude tests of the Pintner variety have largely been replaced by achievement tests, such as the CALIFORNIA ACHIEVEMENT TEST, the IOWA TESTS OF BASIC SKILLS and the COMPREHENSIVE TESTS OF BASIC SKILLS.

placement A cluster of services that include counseling, guidance and help in securing an appropriate position for a student either academically or in the world of work. A function of many high school guidance departments, academic placement refers to the assignment of a student to a level of study in any given course, appropriate to the student's knowledge and proficiency in that subject. Many colleges and universities require applicants to take part two of the SCHOLASTIC ASSESSMENT TESTS or the ACT ASSESSMENT PROGRAM tests to measure proficiency in particular courses and determine whether to place students in freshman or advanced courses in those subjects. In addition to academic placement, vocational and career placement is often a major function of high school guidance offices and of specialized counselors at many colleges and universities. At the high school level, placement generally focuses on VOCATIONAL and GENERAL EDUCATION students who will enter the work force after graduation. Efficient placement offices generally administer a variety of occupational aptitude tests, maintain liaisons with local businesses and industrial firms, maintain lists of job openings and arrange for job interviews for students. Placement offices may also be involved in cooperative education projects, in which vocational educational students study classroom aspects of a trade at school during the morning, then practice their trade under close supervision on the shop floor of a local plant in the afternoon.

Placement offices at the college level limit their services to job and career counseling for

seniors. Called by a variety of names that include career services, career counseling and the like, college placement offices act as liaisons with business and industry on a local, regional or nationwide level, maintaining in-depth descriptions of hundreds of different companies by industry and lists of available entry-level positions. In addition, placement offices arrange for company recruiters to appear on campus to talk about their companies and interview prospective applicants from the graduating class. Depending on the size of the placement office, it may have an entire building at its disposal, with interview rooms and classrooms for special courses in interview techniques, resume writing and job-search skills.

place value Basic to mathematics instruction, the value of a digit based on its position in relation to other digits in a numeral; for several centuries, a basic approach to the teaching of mathematics. Thus, in the numeral 635, the place value of the first position (or place) on the left is one. The digit itself indicates that there are six ones in that position. The place value of the second position is 10, while the actual digit in that place indicates that there are three 10s. The value of the third is 100, while the place values of other positions stretching toward the right would increase in multiples of 10. A decimal—e.g., 635.542—produces fractional place values in multiples of tenths: one-tenth, one one-hundredth, etc. Teaching place values is basic to mathematics instruction in elementary and middle school.

plagiarism The act of copying the ideas and words of another and presenting them as one's own. Categorized as cheating, student plagiarism, like most academic misbehavior, is often the result of a combination of lack of academic motivation and a perceived pressure to succeed. Academic and psychological counseling are usually required. A variety of software is

available to detect plagiarism in student essays and examination papers and, indeed, in articles by learned contributors to scientific and other academic journals. One program can compare a newly submitted article with 300,000 articles in print to determine whether there is any overlapping language in core material. It ignores so-called boilerplate phrases that appear routinely in almost all such articles.

(See also "RESEARCH" COMPANIES.)

planning In education, the formal process of making decisions for the future of school employees, departments and the school itself. In broadest terms, educational organizations require two types of planning: strategic, or long-term, and operational, or short-term. Strategic planning requires identification of the organization's educational goals given the external and internal school environment, the specific methods to be used in achieving those goals and identification of participants in that effort and the possible threats to those goals and specific methods or strategies for countering such threats. Such planning may be the work of an individual such as the school SUPERINTENDENT OF SCHOOL PRINCIPAL in an autocratic situation or the work of various department chairpeople, committees or special task forces of administrators and teachers in a democratic situation.

Operational planning determines specific means for implementing the long-term goals. Thus, individual teachers may be urged to use a specific testing procedure or teaching approach, departments may be created or merged or the school may adopt TEAM TEACHING OR SCHOOLS-WITHIN-A-SCHOOL approaches. In addition, operational planning is required each year to determine the allocation of budget resources.

Plato (427?–347 B.C.) Greek philosopher who, perhaps more than any other person in history, influenced Western (and American)

education. A student of Socrates, Plato founded the ACADEMY in Athens, Greece, in 387. Often called the Western world's first university, the Academy offered a "modern," comprehensive curriculum that included astronomy, biology, mathematics, political science and philosophy. Aside from the framework for modern universities, Plato provided the framework for modern thought through his "dialogues," a series of written works that, for the first time in recorded history, explored the nature of such universal topics as friendship, courage, virtue, piety, atheism, immortality, the soul, beauty, art, love, knowledge, justice and government.

Plato's monumental *Republic* proposed a universal education system similar to the one THOMAS JEFFERSON, BENJAMIN FRANKLIN, BENJAMIN RUSH and JAMES MADISON proposed, without success, to the Continental Congress but which, in many respects, formed the basis of the modern educational structure until the era of "open enrollment" following World War II. Quite simply, it was based on universal public education at the elementary level, with student achievement and competitive examinations to determine who moved on to subsequent levels in secondary and higher education. Only the most brilliant scholar-philosophers were to be admitted to a national university, graduation from which would be required for service as government leaders—"philosopher-kings," as Plato called them. Though never established, the concept of formal education as an unwritten requirement for government service has remained an element of American political life, while the concept of academic selectivity in the climb through the academic ranks remains the heart of American private school education.

platoon plan A program introduced in 1907 in Gary, Indiana, to double school capacity by dividing the school population into two groups, or platoons. While one group attended academic studies in classrooms, the other

platoon used nonclassroom facilities, such as the gymnasium, art rooms, shops, and so on. Often called the GARY PLAN, it spread to some 200 cities across the United States, where waves of immigrant children were filling classrooms beyond their capacity.

Introduced by Gary school superintendent William Wirt, the Gary Plan allowed schools to accommodate twice the number of students as traditional schools with the same number of teachers and, therefore, little additional cost. In 1917, however, parents in New York City rioted against the Gary Plan, which, they maintained, provided their children with inadequate education. It was soon abandoned, and the platoon plan, or platoon school, as it is sometimes called, did not reappear until immediately after World War II, when the mass migration of former soldiers into major cities filled many schools beyond capacity, and they were, once again, forced to adopt platooning.

play Any amusing, entertaining activity and, in education, one of the two most important pedagogical tools for teachers of preschool and elementary school children (the other being talk). For preschoolers, play represents an opportunity to explore and learn what they are capable of learning at their particular stage of development. In addition to educational needs, play also satisfies psychological and emotional needs and develops social and motor skills. The skilled teacher attempts to keep a reasonable balance between structured and unstructured play to ensure the development of specific skills such as counting and singing. At the elementary school level, play not only continues to serve the same functions it does for preschoolers, it also serves an additional integrative function vital to each child's educational future. By integrating work and play in the classroom teachers make the former indistinguishable from the latter—that is, they use play to make learning "fun" and blur the traditional

concepts that make people perceive of academics as “serious work.”

As a pedagogical tool, play was first introduced in Germany in 1837 by FRIEDRICH FROEBEL, the creator of the KINDERGARTEN concept and developer of structured, or purposeful, play activities that lead to learning. In 1877, his book *The Education of Man* helped promote throughout Europe and the United States the spread of kindergarten as an integral part of education. In 1896, when American educator JOHN DEWEY opened his LABORATORY SCHOOL at the University of Chicago, Dewey introduced Froebelian principles—especially the use of play as a pedagogical tool—to all levels of elementary education for the first time. Over the next 50 years, Dewey’s principles of PROGRESSIVE EDUCATION gradually took hold in most American schools, and play, along with talk, remains fundamental to preschool and elementary education in the United States.

playground An open-air area for children’s recreation in elementary school yards and public parks. Playgrounds are usually equipped with special facilities, such as sand boxes, swings, see-saws and jungle gyms, although some are simply left as open areas in which children can play kickball, soccer and other football games. The concept of public playgrounds was developed in 1906 by LUTHER GULICK, the “father” of American physical education, who, with several colleagues, founded the Playground Association of America to further the physical fitness of American children. Gulick had already introduced physical education into many American public schools, but fewer than 10% of American children went to school at that time, and many went to work as young as five or roamed the streets untended. Some playgrounds had been introduced as philanthropic projects in the slums of New York, Boston and Chicago toward the end of the 19th century, when those cities were teem-

ing with immigrants. Most of those original playgrounds were supervised and had been built to lure idle immigrant children and use their “play instincts” to shape them into responsible adults. Gulick promoted the spread of such playgrounds across the United States, and by 1920 few public parks were without them.

Plessy v. Ferguson An 1896 U.S. Supreme Court decision that held separate-but-equal public facilities for different racial groups to be constitutional. As race riots had swept through the South, Louisiana passed a law in 1890 providing for separate-but-equal accommodations for blacks and whites on railroad passenger cars. In 1892, a black man, Homer A. Plessy, was arrested for traveling on and refusing to leave a passenger car reserved for whites. His case was based on FOURTEENTH AMENDMENT “due process” rights, but in 1896 the Court rejected his arguments, saying that the object of the Fourteenth Amendment was “to enforce absolute equality of the two races before the law,” not to force blacks and whites to travel in the same railroad car. As long as facilities for blacks were equal to those for whites, the Court held, there was no violation of the Fourteenth Amendment. On the basis of that decision, southern states extended the separate-but-equal doctrine to all public facilities, including public schools. *Plessy v. Ferguson* and the separate-but-equal doctrine remained the law of the land until 1954, when the Supreme Court ruled in *BROWN V. BOARD OF EDUCATION OF TOPEKA* that separate, racially segregated schools were not and could not be equal in terms of academic quality and were, therefore, unconstitutional. *Brown* led to passage of federal laws banning segregation and discrimination in all places of public accommodation.

PLUS loans A \$1 billion-a-year program of federally guaranteed loans to parents to help

pay the costs of college and university education for their dependent children. The program permits parents to borrow, collateral-free, up to the total cost of their children's education, less whatever financial aid funds the children might have received from grants or loans of their own. Officially called Federal PLUS loans, they are issued on the basis of creditworthiness rather than need and are available either as Direct PLUS loans from the Department of Education or Federal Family Education Loans from commercial banks, credit unions, savings and loan associations and programs such as CollegeCredit sponsored by the COLLEGE BOARD. The government guarantees repayment of principal and interest, which, though variable (and nearly 8% in 2006–07), is capped at 9%. Parents must also pay an origination fee of 3% and an insurance premium of 1%, and they must begin repaying the loan 60 days after the money is loaned. Repayment is spread over 10 years.

Plyler v. Doe A historic 1982 U.S. Supreme Court ruling that public schools are constitutionally obliged to admit children of illegal aliens and provide them with tuition-free public education. It was the first time in history that the Court had ever extended the protection of the Constitution to persons who were not U.S. citizens. The ruling struck down a Texas law that gave local school districts the option of barring children of undocumented aliens or charging them a fee for attendance. At the time, Texas officials estimated that illegal, undocumented aliens—most of them from Mexico—made up about 5% of the state's population and contributed no taxes to pay for their children's education. Of the estimated 750,000 such aliens, about 20,000 were school-aged children. In its ruling, the Court held that alien children come under the FOURTEENTH AMENDMENT guarantee of equal protection of the law.

"By denying these children a basic education," the ruling stated, "we deny them the

ability to live within the structures of our civic institutions, and foreclose any realistic possibility that they will contribute in even the smallest way to the progress of our nation." A minority opinion criticized the majority for "policymaking." The Constitution, said the minority, does not "provide a cure for every social ill, nor does it vest judges with a mandate to try to remedy every social problem."

The decision raised a storm of controversy in states that perceived themselves as being overrun with illegal immigrants. About 85% of the estimated 4 million illegal immigrants live in seven states. California has the most, followed by New York, Texas, Florida, Illinois, New Jersey and Arizona. Overnight, the *Plyler* decision made education the highest out-of-pocket cost of harboring illegal immigrants—a total of \$3.1 billion in the 1993–94 school year alone for about 641,000 illegal immigrant children. Moreover, the total did not include the cost of educating the American-born children (and, therefore, American citizens) of illegal immigrants. California, which was spending almost \$1 billion annually to educate illegal immigrant children, responded with a public referendum that sought to deny schooling, health care and other services to illegal immigrants. It was only narrowly defeated. Nevertheless, hundreds of school districts used residency requirements, which the *Plyler* decision did not overturn, to block the enrollment of illegal immigrant children in local schools. Residency requirements apply to U.S. citizens as well as aliens, whether in the United States illegally or not, and therefore do not deprive any single group of Fourteenth Amendment rights to due process. Most illegal residents hesitate to identify their place of residence, if indeed they have one, for fear of alerting the law as to their whereabouts.

Plymouth Colony The second permanent English settlement in the American colonies,

founded in 1620 by members of a Puritan sect who arrived on the *Mayflower* and landed near present-day Plymouth, Massachusetts. They had originally fled from England to Holland to escape Anglican harassment but left because of “the great licentiousness of youth in that country, and the manifold temptations of the place. . . .” Returning to England, they obtained financing for their journey to America from investors, in exchange for most of their produce from America during their first six years. The Puritans arrived as a community, bonded by ties of family, friendship and deeply held common religious beliefs. Determined to found a Christian “city on the hill” and convinced that English “fountains of learning and religion are so corrupted,” they left education to their own ministers and eschewed all thought of formal education by lay teachers. To ensure education by their ministers, Plymouth passed a law in 1655 requiring all residents to support the church. But formal education remained sporadic, depending largely on the free time that adults and children had away from cultivating the fields and raising enough food to survive. In 1658, more than 15 years after the neighboring colony of Massachusetts had created its first schools, Plymouth enacted its first school law, recommending that its constituent towns provide *PETTY SCHOOLS* for their children. In 1677, Plymouth required that towns with 50 or more families have *GRAMMAR SCHOOLS*. In 1691, the Plymouth Colony united with and was absorbed by the Massachusetts Colony.

political science The study of government and politics with an exploration of their nature, limitations and significance in human life. Political science is designed to provide an understanding of the various forms of political systems and movements and to develop a capacity for intelligent evaluation of public policies and opposing views in various political conflicts. Most political science courses

include American government and politics, comparative government, international relations, political philosophies and a consideration of the purposes of government and the nature of justice.

Deeply tied to the history of American education—and, indeed, the history of the American political system—the study of political and governmental systems has its roots in *PLATO’S Republic*, which describes a theoretical and ideal political system. However, the open study of politics did not begin until the founding of the American republic and the demand by some of its leaders for an American educational system dedicated to the creation of a citizenry educated enough to govern itself. Such an education, said *THOMAS JEFFERSON* and *BENJAMIN RUSH*, would require that the study of politics be added to the traditional curriculum of the arts and sciences. Both insisted that education must be relevant to the new system of government. Monarchy had designed education to teach students the laws of predestination and to teach them to accept their class and position in the social order. The new American republic sought to design education to show students how to govern themselves and their country and motivate them to put public interests ahead of private interests. Although Jefferson, Rush and their like-minded colleagues failed to convince the Continental Congress to establish a national system of universal public education, they did influence the curricula of the secular (and even some religiously oriented) private academies and colleges to include the study of politics and political economy.

The study of politics was a standard element of most college and university curricula by the late 19th century, when American scholars interested in the subject began doing graduate work in European universities. There, they found a greater emphasis—especially in Germany—on the application of scientific methods of research to studies of government and political activities.

Instead of focusing solely on the past and researching old documents and archives, European political scholars studied political activities in real life. They used careful methods of observation and gathered, organized and explained endless details, discovering, for example, that real government authority often lies in the hands of others than those to whom a constitution or set of laws actually grants it. By borrowing the orderly analysis and methodology of the natural sciences, they gradually made the study of politics more scientific, thus giving it its present (and often controversial) name, political science. Generally offered only in the college and university curriculum, some aspects of political science are usually integrated into high school history, civics and social studies courses.

portable classrooms A temporary classroom housed in the shell of a standard, manufactured mobile home that can be transported on flatbed truck trailers from site to site. Portable classrooms are used to cope with emergencies such as the partial or total destruction of a permanent school building or temporary overcrowding of the regular building because of sudden increases in the student population. Portable classrooms are also used in rural areas where the student population of many schools does not warrant the establishment of special education facilities for woodworking, for example, or foreign languages. Specially equipped portable classrooms bring such facilities, along with special teachers, to a school for one term, then move on to another school. In Massachusetts, portable classrooms moved computers from school to school one year, while portable classrooms in other states brought science labs, fine arts programs and specialized vocational training facilities to various schools that would otherwise lack such programs.

portal school An obsolete term referring to TEACHER CORPS schools, in which teachers col-

lege resources were tied to nearby inner-city schools where quality of education was low. The aim of the project, which began at Temple University, Philadelphia, was to provide teachers with competency-based teacher education while simultaneously providing inner-city students with an improved education. Teachers college students were thus trained in actual classrooms with primary and secondary school students whose initially low academic achievement levels quickly reflected teacher competence. A federal project born in 1965 to ease teacher shortages, the Teacher Corps was abandoned in the early 1980s after the shortages disappeared.

portfolio A selective collection of an individual student's work over a specific period of time—usually a month, semester or school year. Portfolios are an element of OUTCOME-BASED EDUCATION programs introduced into many American public schools at the beginning of the 1990s. Because they are selective and represent a totality of the student's work over an extended period, portfolios are used by teachers to assess the overall progress of a student and determine whether the student has achieved the educational goals (or outcomes) set at the beginning of the period.

Individual portfolios are amassed in each subject, with the teacher, in cooperation with students, attempting to eliminate papers and examinations that represent minor setbacks or nonrepresentative examples of the student's work. The simplest portfolios may consist only of the student's best work and poorest work for the period. Indeed, students are often asked to select what they consider their worst and best work for the period to demonstrate their progress. The object is to produce a consistent picture of the student's overall progress (or lack thereof) during the period. The teacher then uses the portfolio, rather than only one or two examinations or papers, to determine whether the student should progress to the next level.

Assessment by portfolio is designed to reduce dependence of school systems on standardized, objective tests and the possibility of a student who has achieved competency in a subject failing a course on the basis of one "bad day" on a test. Portfolio assessment also eliminates the possibility of a student who has not demonstrated competency in a subject automatically passing or graduating on the basis of what may be a good job of guessing correct answers on objective examinations.

Portfolios and outcome-based education are an outgrowth of test results during the 1980s and early 1990s by the NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS. In general, the tests found the average American public school student barely literate in terms of writing proficiency, with reading proficiency only slightly higher. The poor performance was traced in part to the lack of writing assignments in or out of school. Less than half the public school students in the United States are given any writing assignments. Indeed, the average public school student in the United States was assigned only 5.4 hours of homework a week in 2000, compared with 10.7 hours for students in independent private schools. Some 60% of public school students spent less than 30 minutes on homework each day, and 18% did none. Only about 24% of nine-year-olds, 45% of 13-year-olds and 64% of 17-year-olds reported having to write an essay or theme during any given week of the school year. Only 38% of nine-year-olds, 34% of 13-year-olds and 28% of 17-year-olds wrote a book report.

In 1991, Vermont became the first state to experiment with outcome-based education, using the portfolio as a basic evaluative tool. The portfolio approach requires more writing in and out of class, more homework and the production of a body of work indicative of a student's mastery of the subject. In addition to giving students the opportunity to practice, and thus improve, their writing, the approach

teaches them to assess their own work, thus discouraging the pervasive "write-and-forget-it" attitude of some students. Students relate the quality of their work to national norms and thus focus on progressive learning as well as the production of required assignments. Each piece of work becomes part of a record of development rather than an end in itself.

Portfolio assessment also helps teachers to measure the quality of their own teaching. In one California school, for example, teachers noticed different levels of writing quality by the same students in different classes, with far more interesting work emerging from history than from English classes. The English teachers discovered that their colleagues in history classes gave students more preparation for each writing assignment than English teachers assumed was necessary. Thus, portfolios are important tools for reshaping student attitudes about their own work as well as teacher approaches to the education process.

Ironically, there is nothing new about portfolios other than the name. Portfolio assessment is simply an approach to education based on extensive written work in school and at home, and it has always been standard in academically demanding schools. (The term itself is borrowed from the traditional portfolios used to collect student work in art education.) Nevertheless, portfolios have been the target of much criticism. For one thing, they rely on subjective teacher judgments, which can often be biased. Moreover, the lack of a universal scoring method is at the heart of a growing trend by some teachers to replace traditional grades with broad, easy-to-calculate and somewhat meaningless outcome-based evaluations such as "inadequate," "basic," "intermediate" or "adept." In 1998, five years after Vermont had adopted outcome-based education and other states had adopted traditional competency-based education, student achievement in Vermont's public schools remained no better than

about average for the nation, as did that of Kentucky schoolchildren.

Portland Project An effort initiated in 1962 to develop a new high school science curriculum that integrated biology, chemistry, physics, environmental sciences, mathematics and some elements of the behavioral sciences into a single, three-year course. Funded by the NATIONAL SCIENCE FOUNDATION in conjunction with the Portland (Oregon) public schools, Portland State College, Reed College and Oregon State University, the project was based on the premise that the increased overlap between the various sciences had made teaching them as distinct and independent subjects obsolete. Elements of the approach have been absorbed by science departments in most American secondary schools, but each of the sciences continues to be taught as a distinct course, largely because the majority of American high schools require only two years of science or less for graduation, and the average high school student studies science for only two years. Moreover, part two of the College Board's SCHOLASTIC ASSESSMENT TESTS and ADVANCEMENT PLACEMENT subject tests continues to measure specific knowledge in each science.

POSDCORB An archaic acronym whose letters represent the essentials of the educational administration and ORGANIZATION process: planning, organizing, staffing, directing, coordinating, reporting and budgeting.

postgraduate education An often confusing term usually referring to any formal, higher-level education following formal graduation from college. Because of its ambiguity, the term has largely been replaced in higher education by two more specific terms: postsecondary education and graduate education. Postsecondary education refers to formal education following graduation from secondary school, including

education at two-year and four-year colleges, technical institutes, trade schools and special educational units at secondary vocational and academic schools. Graduate education usually refers to education in any of a variety of university graduate and professional schools following graduation from a four-year college with a bachelor's degree. Another use of the term postgraduate refers to students taking a fifth year of secondary school education, in effect repeating their last, or senior, year, usually at a private school, after having graduated from another, usually public, school. Most students enroll in secondary school postgraduate programs to improve their academic record and their chance for admission at selective colleges and universities.

poverty In education, one of the most debilitating factors in a student's pursuit of academic achievement. Students living in poverty tend to come from broken homes, have more siblings, be subject to more parental abuse, have more unschooled parents, have lower quality schools and drop out of school more frequently than economically advantaged students. The definition of poverty varies widely from community to community, but the federal government establishes an annual income level described as the "poverty line"—a dollar total that is the theoretical equivalent of three times the amount necessary to provide a nutritionally sound diet. The figure is about \$14,800 for a family of three, \$19,200 for a family of four, \$23,000 for a family of five, and \$27,000 for a family of six.

About 36 million Americans, or 12.5% of the United States population, live in poverty—excluding an estimated 11 to 12 million illegal immigrants. Children accounted for a disproportionately high percentage of the total, with about 13.5 million, or more than 15% of American children under 18, living in poverty—again, excluding illegals. About 8 million school-age children live in poverty—nearly

17% of the public elementary and secondary school population. About 16% of white schoolchildren live in poverty, nearly 27.5% of Hispanic children, 30% of black children and 11% of Asian and Pacific Islander children. More than 20% of all schoolchildren live in poverty in nine states—Alabama, Arizona, Arkansas, Louisiana, Mississippi, New Mexico, South Carolina, Texas and West Virginia—and more than 30% of schoolchildren languish in the same condition in the District of Columbia. Between 15% and 20% of schoolchildren in 10 other states (California, Florida, Georgia, Illinois, Kentucky, Louisiana, New York, North Dakota, Oklahoma and Tennessee) live in poverty.

Poverty rates are reflected in academic achievement, Hispanic children scoring 9% to 12.5% lower than white students of the same age in reading proficiency tests and 8.5% to 9.5% lower in mathematics proficiency. Blacks score 10% to 13% lower than whites in reading proficiency and 10% to 12% lower in math proficiency. Only about 20% of all black and Hispanic students who graduate from high school are prepared for college, compared with 40% of white high school graduates.

In addition to family social and psychological dynamics, a number of other factors contribute to the poor academic performance of children who grow up in poverty. Few poor families can provide the cultural advantages or preschool education that make wealthier children “school ready” when they enter kindergarten. Indeed, because most poor parents are unschooled, on average their children arrive at kindergarten two years academically below the norm for all American children. Language problems are another factor in the substandard academic performance of poor children. Few arrive at kindergarten with an appropriate command of the English language. Hispanic children learn Spanish in infancy; African Americans grow up learning “Black English”; and, because so many parents of poor white

families are unschooled, their children grow up with limited vocabularies and various types of local or regional vernaculars.

Another factor contributing to low academic performances of poor children is their segregation in neighborhood schools where they make up the vast majority of students and have little or no exposure to educationally advantaged children. Moreover, because of low property values and, therefore, low property taxes in poor areas, the quality of education, which is usually dependent on property taxes for funding, is necessarily low. Schools in poor neighborhoods often have half the number of computers of schools in wealthier areas, for example. Even the physical atmosphere of schools in poor neighborhoods mitigates against academic achievement—decaying buildings, wire-covered windows, graffiti-covered walls, metal detectors at the entrances and security guards patrolling the hallways.

Although many societies accept poverty as a normal condition, the United States government has been engaged in a national WAR ON POVERTY since the early 1960s. The effort began with passage of the ECONOMIC OPPORTUNITY ACT in 1964, when the poverty rate for children reached 26%. It has subsequently been bolstered by a plethora of other programs to support improved education of the poor. Operation HEAD START, for example, has established more than 1,500 tuition-free preschools that have helped about 20 million children become “school-ready” since its inception in 1965. The states, too, have joined in the effort to counter the effects of poverty on school quality by reforming their tax structure to provide equal distribution of school tax monies on a per-student basis, with schools in poor neighborhoods receiving the same amounts per capita as schools in wealthier districts. Indeed, almost half the states—mostly plains and far western states—managed to eliminate the spending gaps between rich and poor school districts by

2005. But 27 states continued to pour more funds into rich districts than poor ones, and disparities reached more than \$1,000 per student in highly populated Illinois, New York and Virginia. Across the nation, the per-pupil spending gap between high-poverty and high-income school districts was \$850. The gap was between \$500 and \$1,000 in nine states—Alabama, Arizona, Delaware, Maryland, Michigan, New Hampshire, Louisiana, Pennsylvania and Vermont—and \$500 or less in 13 states: Arkansas, Colorado, Florida, Idaho, Indiana, Iowa, Kentucky, Maine, Mississippi, Montana, North Carolina, Texas and West Virginia.

(See also AFRICAN AMERICANS; HISPANIC AMERICANS.)

power test An examination made up of questions of increasing difficulty and designed so that none of the test-takers can answer the most difficult questions and therefore cannot achieve a perfect score. The purpose of power tests is to define the upper limits of each test-taker's knowledge. Allowing anyone to achieve a perfect score would not test those limits. Although pure power tests have no theoretical time limits, time limits are necessary for practical reasons. No test can be allowed to go on indefinitely. In practice, therefore, most standardized examinations combine elements of both power and speed.

practical arts A euphemism for GENERAL EDUCATION, secondary school courses in home economics, consumer math, general business, typing and other "skills" to prepare students for "everyday living." In fact, the general education track and "practical arts" have long been the subject of attack by educators across the United States who describe them as an educational "desert" that "relates to nothing, leads to nothing and prepares for nothing." With its emphasis on the practical arts, the general education track is responsible for about two-thirds

of American high school drop-outs, most of whom cite "not interested in school" as their reason for ending their education.

Ironically, the practical arts began as an addition to the traditional academic curriculum at the beginning of the era of progressive education, when educators such as JOHN DEWEY introduced enjoyable problems from real life such as cooking, planting imaginary fields on an imaginary farm and building a house with blocks to teach elementary schoolchildren the principles of reading, writing, measuring and calculating. Public schools in the post-World War II era began using the practical arts as a way of grouping students by ability, allowing slower children to languish in cooking and shop classes while gifted children progressed to academic courses dealing with more abstract mathematics and literature.

Pratt, Richard Henry (1840–1924) American soldier and educator who founded the first school for American Indians outside the reservation, at Carlisle, Pennsylvania. Born in New York and apprenticed a tinsmith, Pratt served in the Union cavalry in the Civil War, rising to captain, and then fought in the Indian Wars. In 1878, he organized the Indian division of HAMPTON INSTITUTE, the school that General SAMUEL CHAPMAN ARMSTRONG had established in Virginia after the Civil War to teach former slaves the manual skills, trades and basic academic skills they needed to lead independent, productive lives. A year later, Pratt took what he learned from Armstrong at Hampton Institute and, with the financial support and approval of the federal government, opened the first nonreservation school for Indians at Carlisle, with 80 Sioux students.

In 1871, Congress ended its practice of dealing with Indian tribes as sovereign nations and declared them wards who would henceforth be restricted to defined geographic areas, or reservations. In doing so, the government

also decided to renew pre-Civil War efforts to convert Indians to a settled American way of life through schools such as the one Pratt established at Carlisle. The Army was initially so pleased with Pratt's results that it promoted him to colonel in 1903. A year later, however, he retired, and the momentum to educate American Indians lost impetus in the face of widespread animus among western settlers and a lack of interest back east. In 1918, under circumstances that remain unclear and seem to be tinged with scandal, the U.S. Army closed Carlisle and converted its facilities to military use.

prayer in school A phrase denoting the controversial issue in American education over the voluntary or required recitation of any sectarian or nondenominational prayer during official public school hours. Over the years, the U.S. Supreme Court and numerous federal courts have consistently held that prayer in school violates the ESTABLISHMENT CLAUSE of the First Amendment to the U.S. Constitution, which states, "Congress shall make no law respecting an establishment of religion or prohibiting the free exercise thereof." The clause has been the rationale for every U.S. Supreme Court decision enforcing the concept of complete separation of church and state, including any arm of the state, such as public schools.

The first significant Court ruling came in 1962 in *ENGEL V. VITALE*, which declared unconstitutional a New York State law giving public school officials the option to mandate a daily, voluntary, nondenominational school prayer at the beginning of each school day. In a landmark reaffirmation of that decision, the U.S. Supreme Court ruled in 1963 in *SCHOOL DISTRICT OF ABINGTON TOWNSHIP V. SCHEMPP* that the Abington (Pennsylvania) School District had violated the Constitution by allowing prayers and Bible readings in public schools—even when it excused unwilling students from such activities. The Court said that in permitting

such prayers and readings, the school district had violated the First Amendment.

Prayer in school has been an issue in education since the founding of the first state-run public school systems in the 1830s. At the time, Protestant churchmen had been in charge of common school education, and prayer and religious instruction was an integral part of the school routine. It remained so into the 20th century, until non-Protestant parents began to gain influence over school boards in major urban centers. They were able to end the practice of religious instruction and daily prayers. After World War II, as the suburbs spread into formerly rural areas, schools in those areas also acceded to the demands of an increasingly heterogeneous population and abandoned school prayers and religious instruction. As these opponents of school prayer moved into fundamentalist Christian areas of the South and Mormon areas of the West, they ran into strong opposition to demands that school prayer be abandoned. Indeed, most southern states and school districts had rules and regulations mandating the recitation of prayers in school each morning, along with the Pledge of Allegiance to the flag of the United States. Although *Abington* declared such practices unconstitutional and, therefore, illegal, it did not eliminate prayer in school in the many religiously homogeneous school districts throughout the South, Midwest and West, where it continues today.

Georgia and several other states have attempted to bypass *Abington* with laws requiring students to observe various types of "moments," ranging from moments of contemplation to moments of silence. Tennessee, Alabama and Oklahoma have each, at one time or another, enacted laws that bypass the Supreme Court ban on teacher-led or school-directed prayer by permitting student-led, nonsectarian, nonproselytizing, noncompulsory prayers on public school grounds at noncompulsory student assemblies, sporting events

and graduations. When challenged, each of these efforts has been declared unconstitutional in federal courts. In 1985, for example, the Supreme Court ruled in *WALLACE V. JAFFREE* that an Alabama state law mandating a “moment of silence” in public school classrooms was unconstitutional. The Court called the law a thinly disguised endorsement of religion designed to encourage students to pray. In 1992, the Court ruled in *LEE V. WEISMAN* that prayer at a school graduation in Providence, Rhode Island, was unconstitutional, calling it “pervasive” government involvement in religious activity that left students little choice but to participate.

In 2000, the Supreme Court reaffirmed its earlier decisions, ruling that prayers led by students at high school football games—and by implication other athletic contests, school events and school-sponsored extracurricular activities—were unconstitutional. In the case of *SANTA FE INDEPENDENT SCHOOL DISTRICT V. DOE*, the Court ruled that “the delivery of . . . officially sanctioned . . . pregame prayer has the improper effect of coercing those present to participate in an act of religious worship” and that “the Constitution is abridged when the state affirmatively sponsors the particular practice of prayer.” The Court asserted, “These invocations are authorized by a government policy and take place at government sponsored school-related events. . . . Contrary to the district’s repeated assertions that it has adopted a ‘hands-off’ approach to the pregame invocation, the realities of the situation clearly reveal that its policy involves both perceived and actual endorsement of religion.” The 6-3 ruling stopped short of banning all prayer on public school property, however, insisting that “by no means” did its decision “impose a prohibition on all religious activity in our public schools” or prohibit “any public school student from voluntarily praying at any time before, during or after the school day.”

The issue has yet to be fully resolved. Some federal courts have upheld student rights to pray independently of school authorities, but the question remains whether students have the right to do so on public school property during hours reserved for nonsectarian education. There is little question that students have a right to pray silently and individually and that they can legally express their beliefs at school, as long as such expressions do not disrupt class or any other school activity and as long as the school or its representatives do not endorse such actions. Just as the Court has ruled that schools and government cannot endorse religion, it has also ruled that they cannot inhibit religion by banning all individual free speech. The question of disruption and interference in the rights of others lies at the heart of the problem, and it may well be insoluble.

Regardless of eventual Supreme Court rulings in such cases, the controversial issue of prayer in school may never be resolved in states where fundamentalist Christians and other devout sects constitute a majority of the population and can, therefore, pressure school boards and legislatures into violating Supreme Court orders on the prayer issue. Unlike racial desegregation, which U.S. federal marshals resolved by physically escorting black students into white schools, there is little a federal police force can or would do to prevent students from praying.

Indeed, across the United States, an estimated 12,000 student-run Bible clubs conduct voluntary lunchtime prayer meetings in unused classrooms or on the grounds outside school buildings. Approximately half the high schools in the United States include prayers in their graduation ceremonies. In the South, a prayer is as integral a part of pregame ceremonies as the singing of the national anthem at football games. Some of these activities are private, voluntary and within constitutional and court guidelines, but much of it goes beyond what is

legally permissible. For that reason, a large segment of the American population continues to pressure lawmakers to enact laws and even to amend the Constitution to permit or mandate prayer in school. Polls by People for the American Way, a civil liberties group, indicated that 60% to 70% of Americans favor permitting voluntary, nondenominational prayer in school.

(See also *AGUILAR V. FELTON*; *CHURCH-STATE CONFLICTS*; *EPPERSON V. ARKANSAS*; *EVERSON V. BOARD OF EDUCATION*; *MCCOLLUM V. BOARD OF EDUCATION*.)

predicting student population (PSP) Any of several statistical methods of estimating district or school enrollment over an extended period. Also called predicting pupil population (PPP), PSP is essential for long-term budget planning as well as for orderly expansion or contraction of physical plant, teaching equipment and staff. There are a number of accepted, albeit complex, methods for predicting student population. All rely on elements of population data derived from the federal government's decennial census, the U.S. Department of Education's *DIGEST OF EDUCATION STATISTICS*, local (usually annual) census figures, neighborhood and district land availability, new housing starts, local birth rates and historical data on migration in and out of the areas served by local schools. Once collected, such data can then be fed into any of several PSP formulae, each of which varies in validity and reliability.

The growth-curve method, based on projections of a graphic curve representing enrollment in previous years, is the least reliable because there is no basis for assuming that the direction of any curve will remain unchanged. The birth-survival technique charts a series of ratios, each one determined by the number of children born in the community in each successive year and the number who subsequently enrolled and remained in school. The widely used corrected-promotion method charts ratios

for each grade based on the number of students who successfully complete one year and reenroll the following year.

preengineered schools A euphemism for factory-made, prefabricated buildings that are designed to be used as school facilities. Architecturally plain, they represent a relatively quick and inexpensive method of raising a school—usually in half the time of conventional construction, with far less on-site labor and at a predictable cost that seldom waivers from the original estimate. Often used in the wake of natural disasters that have destroyed older facilities, preengineered schools have a number of advantages and disadvantages because they represent a permanent investment. Unlike *PORTABLE CLASSROOMS*, which are nothing more than mobile homes adapted for classroom use, preengineered buildings have little resale value. For communities that will eventually be able to build a more substantial structure, preengineered buildings may represent a substantial capital loss. On the other hand, preengineered buildings may represent the only choice for economically depressed communities with no prospect of obtaining capital funds to build a more substantial school structure.

prejudice Literally, a prejudgment that can consciously or unconsciously determine a person's behavior toward another person or group of people—to their advantage or detriment. In education, it can influence teacher relations with students or other teachers, and it can influence the relations of students with their teachers or with other students. As such, prejudice is usually detrimental, because even when a teacher or student exhibits positive prejudice toward one or more other people, such prejudice automatically implies less favorable feelings toward others. "The net effect of prejudice," concluded the renowned American psychologist/educator GORDON ALLPORT, "is to place the

object of prejudice at some disadvantage not merited by his own misconduct." Teacher and student prejudice in school can focus on the intellectual, behavioral, physical, racial and/or religious characteristics of others. About 36% of American teachers report racial prejudice and 5% report racial tension among students to be a major problem in their schools, according to studies by the CARNEGIE FOUNDATION FOR THE ADVANCEMENT OF TEACHING. Other common forms of prejudice among students are religious prejudice, prejudice against intellectual achievement and prejudice against peers deemed "uncool" for not conforming to a variety of social norms for their age group. Despite the disruptions that prejudice produces in the academic environment, the vast majority of American public schools have no formal programs designed to mitigate or eliminate prejudice.

Preliminary Scholastic Assessment Test (PSAT) A practice examination administered twice in the fall of the high school junior year, prior to the taking of the Scholastic Assessment Tests college admission examinations. Administered by the EDUCATIONAL TESTING SERVICE of Princeton, New Jersey, the PSAT consists of five sections: two verbal sections of critical reading lasting 25 minutes each, with a total of 48 questions; two math sections lasting 25 minutes each, with a total of 38 questions; and one 30-minute writing skills section with as many as 40 questions. Unlike SAT I and SAT II scores, PSAT scores are not sent to any colleges. Because PSAT scores are a relatively accurate indicator of how a student will perform in the SATs, ETS sends results to each student's high school guidance counselor or college advisor to serve as a guide in college selection. Many counselors tend to steer students with low PSAT scores to less academically demanding colleges. In addition to serving as a practice test for the much longer and more arduous SATs, PSATs also serve as an optional first step in the

national competition for NATIONAL MERIT SCHOLARSHIPS. More than 8,000 college scholarships are awarded annually, from \$500 to \$2,500 a year for each year of college.

preparatory ("prep") school Originally, a private, selective, academically demanding, residential secondary school that prepared students for admission to the most selective private colleges and universities. Although a few preparatory schools can trace their origins to 18th-century academies, the term preparatory school did not become widespread until expansion of private colleges into universities in the period between the Civil War and the beginning of the 20th century. During that time, college presidents such as Yale's TIMOTHY DWIGHT bemoaned the lack of academic preparation of incoming students. Dwight encouraged Horace Taft, the brother of the future president, to found the Taft School (1890) in Watertown, Connecticut, to prepare boys academically for the demanding work at Yale. Dwight was also instrumental in the founding of Hotchkiss School (1891) in Lakeville, Connecticut, which also became a feeder school for Yale. Similarly, Groton School had been opened in Groton, Massachusetts, in 1884 to prepare students for Harvard, while other residential prep schools were established to cater to students seeking admission to Princeton, Dartmouth and other academically demanding colleges.

Because most of the nation's most selective private colleges were limited to the Northeast, preparatory schools themselves remained largely a northeastern institution. In general, the students they prepared and the students that the private colleges admitted were restricted largely to white Anglo-Saxon males, with Roman Catholics and Jews accepted in only limited numbers and African Americans, American Indians and all women virtually excluded. With the passage of civil rights laws in the 1950s and 1960s, both prep schools and col-

leges were forced to end discriminatory admission practices. Although still selective and academically demanding, traditional prep schools no longer have “feeder” relationships with any colleges. Moreover, a host of other private secondary schools—both residential and day schools—joined their ranks in the second half of the 20th century, as private education spread southward and westward. The National Association of Independent Schools now lists about 900 such schools across the United States, and their proliferation has changed the connotation of the term preparatory school to almost any private secondary school that focuses its curriculum on academic preparation for college.

pre-post testing The administration of standardized examinations scored on the basis of a GRADE-EQUIVALENT SCALE before and after a particular course of study. A standard procedure in many public schools, pre-post testing not only helps evaluate student progress, it also serves as an effective method of assessing the curriculum and teaching quality of a class. Thus, if a third grade class begins the year with an appropriate 3.0 grade-equivalent score and ends the school year with only a 3.6 grade-equivalent score, all elements of the class would warrant an immediate assessment. The students might indeed be slow learners, but it is just as possible that they received poor instruction or that the curriculum was inadequate and did not cover enough materials to prepare them to enter fourth grade with a more appropriate 4.0 grade-equivalent score. Pre-post testing is also used to evaluate special education and remedial programs to measure the effects of such intervention.

preprimary grades Formal classes for pre-elementary years organized within a conventional elementary school, as opposed to a freestanding, independent PRESCHOOL. KINDER-

GARTEN is the most common example of the preprimary grade, but some private schools also have a four-year-old group, thus giving the school two preprimary grades.

preprimers A somewhat archaic term referring to a specific level (the current term) in the BASAL READER series. Used with the youngest, beginning readers, preprimers are introduced after students have mastered the readiness book at the first level, but before the primer, or first hardcover book in the series. The first of the series of soft-cover preprimers introduces readers to about 20 to 30 new words, each presented on an individual, illustrated page. The most advanced preprimers present complete sentences.

preprofessional education Postsecondary, college-level instruction in practical courses that train students for specific professions such as accounting, advertising, communications, health care, journalism and other occupations that do not require graduate degrees. Of the more than 1,600 accredited four-year colleges, all but about 100 offer some preprofessional education, while almost all of the more than 1,600 accredited two-year colleges are essentially geared toward preprofessional education.

prereading preparation A pedagogical technique that elicits student discussion about a topic prior to reading of an actual document or text. Thus, prior to assigning the reading of Oscar Wilde’s *The Importance of Being Earnest*, a teacher might ask the class about the spelling of the word Earnest and the possible double meanings. Prereading preparation is especially important for less gifted students who may be less able to appreciate the subtleties of a piece of literature or historical work and, indeed, might fail to understand it altogether.

Presbyterianism A form of Calvinism and one of the major religions that emerged from

the Protestant Reformation of the 16th century, along with the Lutheran, Anabaptist and Anglican (or, in the United States, Episcopal) Churches. Presbyterians were deeply tied to the development of American education in the colonies and in the independent nation that they became.

Presbyterianism is a form of church government as well as part of the theological tradition known as Presbyterian and Reformed. Almost identical in their Calvinist traditions, the Presbyterians originally organized in Britain and Scotland, while Reformed groups organized on the European Continent. The Presbyterian form of church government was a compromise between the strict, Anglican hierarchal structure (with the king of England at the top of the hierarchy) and the Puritan Congregationalists, who did away with hierarchy and granted each church independence in the naming of its preacher. The Presbyterian model balances power between the clergy and laity and between congregations and larger governing bodies. Elected elders and their pastor govern each church. They, in turn, belong to a regional presbytery, or classis, which is part of a still larger supra-regional synod, which is part of the national general assembly. At all levels, however, elders and clergy are elected rather than appointed, as in the Anglican model. Thus, various hierarchies of elected representatives produce a unity of church practices not possible in Congregationalism, but they do so democratically. As they arrived in the colonies, they came with a deeply felt belief in democratic rule.

When the first handful of English and Scottish Presbyterians arrived in New England in the 1640s, Puritan Congregationalists were well established in New England and Anglicans in Virginia. Few in number, Presbyterians had no difficulty attending Congregational churches, which also evolved from Calvinism and differed little from Presbyterianism except

in church government. Indeed, it was not until 1683 that the first Presbyterian church was founded, in Snow Hill, Maryland, by Francis Makemie (1658?-1708?), an Irish-born minister and graduate of the University of Glasgow. By 1689, he had helped organize 15 Presbyterian churches in the colonies, and by 1706, he had organized the first American presbytery. The first synod was established in 1716 and the first general assembly in 1789.

Early Presbyterians emphasized the importance of the sermon in their religious services, and their ministers were all university-educated men—most of them Scots who had studied at the then-preeminent universities of Glasgow and Edinburgh. Their sermons were learned and profound, and Presbyterians as a group demanded a level of erudition from their ministers that could be filled only by university graduates. Moreover, they demanded that their ministers provide their children with an education comparable to their own. The result was an explosion in the number of Presbyterian academies and educational institutions. Between 1727 and 1783, Presbyterian clergymen founded at least 54 academies and two colleges, William Tenant's LOG COLLEGE and the COLLEGE OF NEW JERSEY, later PRINCETON UNIVERSITY. All were distinguished institutions because of their close ties to the Scottish universities from which their learned founders had graduated, and all introduced a degree of individual liberty, freedom of intellectual inquiry and discussion and institutional democracy that eventually became a hallmark of American higher education. Presbyterian schools remained a major force in American education before and after independence, with Princeton University producing the likes of JAMES MADISON. Princeton's president, the Presbyterian minister John Witherspoon, was the only clergyman to sign the Declaration of Independence.

As secularized public schools emerged in the 1830s and 1840s, the Presbyterian General

Assembly grew concerned that state schools would no longer provide children with religious training. The assembly agreed to found a new system of parochial schools, and between 1850 and 1855 it established nearly 100 new schools in 26 states and the District of Columbia. During the last half of the 19th century, however, growing public school systems siphoned off many students from Presbyterian schools, which either went out of existence or converted into residential boarding schools and college PREPARATORY SCHOOLS for the elite. There are now only about 100 Presbyterian schools remaining in the United States, and most admit students on a nonsectarian basis.

Like the Congregationalists, the Presbyterians have split a number of times since their arrival in the American colonies. They first split during the GREAT AWAKENING of the 1740s, between Old Light adherents to orthodoxy and New Light revivalists, who invited any and all to “meet their God.” Princeton’s Witherspoon was instrumental in closing that rift, but a deeper wound a century later in 1830 split abolitionists and pro-slavery adherents into southern and northern factions in a schism that lasted for 150 years. The 1920s and 1930s saw still another division over FUNDAMENTALISM and MODERNISM. In 1983, the United Presbyterian Church in the U.S.A.—the “northern Presbyterians” of the Civil War—and the “southern” Presbyterian Church in the United States reunited to form the 3.4 million-member Presbyterian Church (USA). There remain eight other Presbyterian churches, with a total membership of about 600,000, and there are six American Reformed churches with Presbyterian governments and a total membership of more than 1.8 million.

preschool Any formally or informally organized program designed to teach pre-kindergarten-aged children a variety of specific school-readiness skills. Preschools are designed

to help children feel comfortable in a school setting, develop skills in independent thinking and develop a sense of individuality. Not a part of the standard public school program, preschools are common in private schools. Staffed by professionally trained teachers, ideal preschool programs are generally designed for four-year-olds but may include mature three-year-olds. They generally provide a combination of structured and unstructured play, with a wide variety of specific, educational materials. Virtually synonymous with NURSERY SCHOOL, preschool programs have no formal curriculum as such, but they do have curricular goals. These were identified by some 3,000 kindergarten teachers surveyed by World Book, the encyclopedia publisher, which based its Early World of Learning program for preschoolers on the results. Preschoolers are expected to have a grasp of the following:

- Size: understands big, little, long, short; matches shapes or objects according to size;
- Colors and shapes: recognizes and names primary colors, circles and rectangles; matches objects and drawings by shape; copies shapes;
- Numbers: counts through 10; understands empty, full, more, less;
- Language skills: speaks clearly and in complete sentences; constantly expands vocabulary; pronounces own first and last name and names of family members; identifies others by name; expresses self verbally rather than behaviorally; repeats sentences of six to eight words and completes incomplete sentences by supplying proper missing word; tells the meaning of simple words and the words in a story; can tell a story from a picture; understands that print tells a story; can read and write own first name;
- Reading readiness: knows what a letter is; remembers objects from a picture; looks at books and magazines; has own books; is read to frequently; pretends to read and often succeeds; recognizes and repeats nursery rhymes; knows parts of body; knows functional uses of various objects; knows common farm and zoo animals;

- Position and direction: understands up, down, in, out, front, back, over, under, top, bottom, beside, next to, hot, cold, fast, slow;
- Time: understands day, night; knows age and birthday;
- Listening and sequencing: follows directions; listens carefully to short stories without squirming; recognizes common sounds; repeats sequences of sounds, numbers, and the essence of a simple story in correct sequence;
- Motor skills: can run and walk in a straight line, jump, hop, alternate feet walking stairs, march, stand on one foot five to 10 seconds, walk backward five feet, throw a ball, clap hands, button and zip, paste objects, handle scissors well, cut simple shapes, build with blocks, complete simple puzzles of at least five pieces, draw and color beyond scribbles, control pencil and crayon, copy simple shapes;
- Social-emotional development: can be away from parents for several hours without being upset; is not afraid to go to school; asks to go to school; takes care of toilet needs independently; dresses self; knows how to use a handkerchief; brushes teeth; crosses residential street carefully; cares for own belongings; puts away toys; carries plate of food; knows own and parents' names, home address, telephone number; talks easily; enters into conversation; meets visitors without shyness; recognizes authority; likes teachers; follows directions; gets along with other children; can work independently or in group projects; able to stay on a task until completion; helps with chores; maintains self-control.

To accomplish these goals, preschool teachers use a wide variety of concrete objects with which children normally play—dolls and stuffed animals, toys, blocks, paints and so on—as well as any objects children might bring to school themselves, such as shells collected at the shore or a plant or favorite pet. Music, singing, and organized and free play are all brought into the preschool learning formula.

Although preschools have been in existence since 1916, they were almost all private

schools, reserved largely for children of wealthy parents. In 1965, preschool education was extended to the poor through the Head Start program, which eventually established more than 1,400 tuition-free preschools accommodating about 1 million children a year. The benefits of preschool education were identified in a landmark 22-year research project by High Scope Educational Foundation, which began in 1962 and followed a group of 123 poor African-American children in Ypsilanti, Michigan, for 20 years. The study compared children who had attended preschool with those who had lacked that experience and found that preschool participants grew up with significantly higher rates of high school graduation and employment—and lower rates of teen-aged pregnancy, welfare, delinquency and crime. About 55% of American children three to five years old are in some form of preschool, with the percentage ranging, according to annual income, from 79% of children from families making more than \$75,000 a year to 43% of children from families making less than \$10,000 a year. More than 1 million children across the nation are on the waiting list for admission to the overcrowded federal HEAD START program.

(See also **READINESS SKILLS**; **READINESS TESTS**; **TESTING PRESCHOOLERS**.)

president In education, the chief executive officer of an institution of higher education, that is, a college or university. Presidents (or chancellors, as they are called at English and a handful of American universities) are charged with carrying out broad educational policies determined by governing boards of trustees in the case of private institutions, or boards of state-appointed regents in the case of public colleges and universities. Included among their ultimate responsibilities are financial management, implementation of educational policies, personnel management, fund raising, public

relations, recruitment of faculty and students, mediation of campus disputes, recommendation of policy changes to governing boards and service as public spokesperson for the institution and a voice in education. Depending on the size of the university, all or many of these responsibilities may be assigned to subordinate vice presidents or officers such as deans or directors of admission, administration, faculty affairs, finance, etc. In the 2004–05 academic year, the median annual salary of all college and university presidents was more than \$180,000, but the median varied widely according to type of institution. The median salary for presidents of research universities offering doctoral degrees was more than \$280,000; universities offering master's degrees, \$190,000; four-year colleges offering only bachelor's degrees, \$180,000; and two-year community colleges, \$135,000. Presidents of multiple-campus systems earned far more—a median of \$250,000—and presidents of private research universities saw their incomes rise to a median of nearly \$500,000. But salaries do not include benefits and other forms of compensation that can often more than double total income. Seventy private colleges and universities offered their presidents total compensation packages of \$500,000 or more, and five presidents earned more than \$1 million. The five universities that offered the highest compensation packages to their chief executives were Vanderbilt University (\$1,171,211), Cornell University (\$1,004,034), Rensselaer Polytechnic Institute (\$983,365), Boston University (\$945,654) and Johns Hopkins University (\$837,016). New York University, Yale University, Northwestern University, University of Southern California and Rice University each paid their presidents compensation of between \$700,000 and \$800,000. Massachusetts Institute of Technology paid its president about \$622,000, while Harvard paid about \$595,000 and Stanford about \$573,000. In the public sector, the median compensation for

presidents of research university and college systems was just under \$375,000; 42 presidents earned more than \$500,000 a year, 15 earned more than \$600,000 and seven earned more than \$700,000. The president of the University of Delaware received the highest compensation package in 2004–05—\$979,571 plus the use of a house and car. Purdue University paid its president \$880,950 (plus house and car).

Once dominated by men, the office of the president at American colleges saw a major influx of women during the last decade of the 20th century, with the number of women holding the president's office rising to nearly 20% by 1998, compared to fewer than 10% in 1986. University of Pennsylvania's Judith Rodin, the first woman ever to head an Ivy League institution, was the highest-paid university president in 1998–99, with a compensation package of \$655,557. Before she left in 2004, her total compensation reached nearly \$900,000. By the first years of the 21st century, women accounted for more than 21% of college presidents in the United States, compared with about 4% two decades earlier.

College presidents were far from the highest-paid employees at institutions of higher education, however. The median income for deans of medical schools was \$325,000, deans of dental schools \$230,000, deans of law schools \$220,000 and deans of schools of veterinary medicine \$186,000. The chief health-professions officer at all institutions of higher education earned a median salary of more than \$215,000, and some college basketball and football coaches earned more than \$1 million each.

Presidential Scholar in the Arts An honorary, nonmonetary award given by the president of the United States each year to 20 American high school seniors deemed by the National Endowment for the Arts to be most talented in the performing arts. An extension of the Presidential Scholars Program, students are

selected on the basis of essays and auditions and, like Presidential (academic) Scholars, they receive an all-expenses-paid trip to Washington with their families and teachers for presentation of their awards by the president of the United States. In addition, they are invited to give performances and presentations in the concert hall of the John F. Kennedy Center for the Performing Arts in Washington, D.C.

Presidential Scholars The nation's highest honor for a high school student, an honorary, nonmonetary award given by the president of the United States each year to the 141 most distinguished graduating high school seniors in the United States. Chosen on the basis of their academic and artistic success and their leadership and involvement in school and community, two scholars—one male, one female—are selected annually from each state, the District of Columbia, Puerto Rico and from various territories and overseas military bases and schools, along with 15 students chosen "at large." Scholars must be U.S. citizens. Created by executive order of President Lyndon B. Johnson in 1964 and funded by U.S. Department of Education discretionary funds, the program does not permit scholars (or their families or schools) to apply independently. Students with the highest SAT or ACT scores in each state and geographic entity each year are automatically selected, creating a pool of 2,600 student semi-finalists, who receive applications requiring original essays, self-assessments, secondary school reports and transcripts.

Five hundred finalists are chosen from the original pool by an unpaid White House Commission on Presidential Scholars made up of distinguished Americans, who then select the 141 Presidential Scholars. In addition to the designation of Presidential Scholar for one year, students, their families and the teachers they designate as most influential in their lives receive an all-expenses-paid four-day trip to

Washington, D.C. After various receptions with elected representatives, government officials, educators, authors, musicians, scientists and other distinguished Washington leaders, the scholars are each awarded the Presidential Scholars medallion by the president at the White House.

presidential scholarship A merit award of variable monetary value awarded at the discretion of the president of any college or university to one or more students. Not to be confused with the PRESIDENTIAL SCHOLAR program sponsored by the president of the United States, presidential scholarships are not a universally available element of college and university financial aid programs. Although some colleges do make them available annually and encourage applications by qualified scholars, others offer no such award and still others make them available only occasionally, depending on the availability of discretionary funds. Conditions for such awards vary from college to college.

President's Commission on Campus Unrest A nine-member panel appointed by President Richard M. Nixon in 1970 to study the growing number of disturbances on American college and university campuses. Such disturbances had provoked troops of the Ohio National Guard to shoot and kill four students and wound nine others at Kent State University on May 4, 1970. Ten days later, on May 14, Mississippi policemen shot and killed two black students and wounded 11 others during disturbances at Jackson State College in Mississippi. Warning that the crisis could threaten "the very survival of the nation," the commission delivered its report on October 4, 1970. Headed by former Pennsylvania governor William W. Scranton, the nine-member panel said the Vietnam War had caused divisions in American society as "deep as any since the Civil War."

The commission called the shootings on the Jackson State Campus “clearly unwarranted” and said the cause was “the confidence of white officers that, if they fire weapons during a black campus disturbance, they will face neither stern departmental discipline nor criminal prosecution or conviction.” The report called the Kent State killings by National Guardsmen the previous May the result of “indiscriminate firing” that was “unnecessary, unwarranted and inexcusable.” But it also said that “violent and criminal” actions by students had led to the tragedy. “Those who wreaked havoc on the town of Kent, those who burned the ROTC building, those who attacked and stoned the National Guardsmen and all those who urged them on and applauded their deeds share the responsibility” for the deaths and injuries. Nevertheless, it continued, “no one would have died” if the Ohio National Guard had followed U.S. Army guidelines against the “general issuance of loaded weapons to law enforcement officers engaged in controlling disorders” that fall short of “armed resistance.”

Citing the war as the primary cause of student disaffection with their country, the commission’s report predicted, “A nation driven to use the weapons of war upon its youth is a nation on the edge of chaos. A nation that has lost the allegiance of part of its youth is a nation that has lost part of its future.” The commission urged Nixon to “exercise his reconciling moral leadership as the first step to prevent violence and create understanding. To this end, nothing is more important than an end to the war in Indochina.” The president ignored the report, while Vice President Spiro T. Agnew called it an example of “scapegoating.” Two months later, President Nixon sent a letter to chairman Scranton placing responsibility for maintaining campus peace “squarely with the members of the academic community” and not with the federal government. With respect to the Vietnam War, he said he could not defer to

views of college students, who represented a mere 4% of the nation’s population.

President’s Commission on Foreign Language and International Studies A study group formed in 1979 that revealed a startling lack of interest and training in foreign languages in American public schools at a time when international trade had reached about one-sixth of the gross national product. The commission found that the study of foreign languages had actually peaked in 1915, when 36% of all high school students studied another language. By 1980, the percentage had dropped to 15%, the lowest since 1890. Moreover, the study found that only 4% of students who start Spanish and German studies ever complete a full four-year course. About 52% of first-year French students completed the four-year course. “The hard and brutal fact is that our programs and institutions for education and training for foreign language and international understanding are both currently inadequate and actually falling further behind,” the study concluded.

By 2000, some progress had been made in public school language studies, with nearly 44% of high school students enrolled in foreign-language courses, compared with only 22.7% in 1982. Part of the increased enrollment, however, could be traced to the growth of bilingual education programs. Relatively few students completed the full four-year course. The average American high school student completed an average of 1.76 years of foreign-language studies, an improvement over the 0.97 years in 1982, but far short of the years of study needed to obtain mastery of foreign languages—and commonly attained by European and Japanese students.

prevocational education One or more courses designed to give middle- and high-school students an overview of “The WORLD OF WORK,” which, along with “Technology,” is the

title many schools give to such courses. Prevocational education usually begins with a one-semester course detailing the history of man's use of tools; the history of various technological advances, such as the telephone, car and airplane; the union of science and technology; and the ethical and social issues technology has spawned. The second semester of prevocational education usually studies the range of various types of work, what each type entails, the training required, the potential rewards, the importance to the economy, the status and function in society and whether opportunities in each field are increasing.

primary school A generic term that, when accurately used, refers to kindergarten and the first three grades of elementary school. The original primary schools were the so-called COMMON SCHOOLS of 17th- and 18th-century England and the American colonies, which were concerned exclusively with teaching students enough "letters" to read the Scriptures and enough "numbers" to calculate correctly in the marketplace. As state public school systems emerged in the late 19th century, primary school education expanded to include elementary level reading, writing, arithmetic, arts and crafts, science, geography, history, music and physical education. The term is often used inaccurately today as a synonym for elementary school education, as opposed to SECONDARY, OR MIDDLE SCHOOL and HIGH SCHOOL, education. In more accurate terms, modern elementary school education is divided into three levels: PREPRIMARY GRADES (preschool, when available, and kindergarten); primary, or early elementary grades (grades 1-3); and upper, or late elementary grades (grades 4-6).

primer The first, or beginning-level, book in a series designed to educate a student in a particular subject. Usually used to refer to beginning instruction in reading, primers date back

to 16th- and 17th-century England and the American colonies, when they were somewhat advanced texts for teaching students to read the Scriptures. HORNBOOKS were used at the time to teach beginning readers their letters. The first primer published in the American colonies was the *NEW ENGLAND PRIMER*, which combined the alphabet and syllabarium of the traditional hornbook with the Lord's Prayer, the Creed, the Decalogue and an authorized catechism. Today the word primer usually refers to the first hardcover text in the basal reading series, given to students after they have successfully completed work in three or four softcover preprimers.

Princeton plan A school desegregation plan that pairs two nearby racially imbalanced schools and redistributes the student population to achieve integration in both. Developed to combat de facto segregation of the North rather than de jure segregation of the South, the plan originated in Princeton, New Jersey, in 1948, six years before the U.S. Supreme Court issued its first declaration ordering racial desegregation of American public schools. Under the scheme, all students in kindergarten and grades one, two and three attend one school, while all fourth, fifth and sixth graders attend the other. Most effective in ending racial segregation in smaller rural and suburban areas, the plan was widely implemented throughout the northern United States, with success largely dependent on the distances and ease or difficulty of travel between the paired schools.

Princeton University One of the preeminent institutions of higher education in the United States and among the most selective universities in the world, Princeton was founded as the COLLEGE OF NEW JERSEY by the Presbyterian Synod of Philadelphia in 1746 after a split in the New York Presbyterian Church between orthodox Old Light and more liberal New Light factions. The New Light acad-

emy was moved to the home of Jonathan Dickinson in Elizabethtown, New Jersey, then to the parsonage of Aaron Burr, Sr., in Newark and finally to Nassau Hall in Princeton, where Burr and three subsequent presidents turned it into a center for controversy with Old Lights in New York.

By 1768, however, the controversy was driving away prospective applicants, and the trustees invited a neutral figure, the respected Scottish clergyman John Witherspoon, to rebuild the school and its finances. Finding students inadequately prepared, enrollment

from the South in steep decline and a near empty exchequer, he set off on trips through the colonies, preaching, recruiting students and gathering funds. Although the college's primary function was to train students for the ministry, Witherspoon opened it to students of all Protestant sects and offered education useful in professions other than the ministry. He promoted the college as a center of learning and recruited students from some of the finest and wealthiest families.

Building on his great popularity, Witherspoon reshaped Princeton and, in so doing,



Nassau Hall, the oldest building at Princeton University, stands at the entrance to the campus. The original hall was burned during the Revolutionary War. (Princeton University)

eventually helped shape the many American colleges his students would one day found. He added American education to the traditional classic education, broadening traditional classic and philosophical studies to include English and French language studies, history, oratory and eloquence. Externally, he redirected the effort of the college to community service; internally, he made clear to students that their work at college was to give them the education necessary to fulfill their obligation to serve the commonwealth and the church. His graduates included one president of the new nation, James Madison; a vice president, Aaron Burr; 10 cabinet officers; 60 members of Congress; and three Supreme Court justices. In effect, Witherspoon and the College of New Jersey helped shape the leadership of the United States and, indirectly, the shape of the new nation and the type of higher education it would offer its children.

In the 1870s, Princeton joined a handful of progressive colleges that decided to expand the arts and science curriculum and relegate theology to secondary status. In 1896, it ended its affiliation with the church, became non-denominational and adopted its present name. Coeducational since 1969, Princeton began expanding its undergraduate body from about 4,500 to nearly 7,000 during the first decade of the 2000s. Princeton offers the full range of liberal arts and sciences. All seniors are required to write an undergraduate thesis to obtain their bachelor's degrees. Princeton's four graduate schools include the world-renowned Woodrow Wilson School of Public and International Affairs. Woodrow Wilson was both a graduate and president of Princeton (and governor of New Jersey) before becoming president of the United States. In 2001, Princeton launched an innovative new scholarship program using income from its \$10 billion endowment to replace all student loans with outright grants that would allow students to graduate debt-

free. Costs of attending private institutions such as Princeton had reached prohibitive levels of more than \$45,000 a year, which discouraged many of the nation's outstanding young scholars from applying to such schools.

principal The title of the chief executive or administrative officer of an elementary, middle or high school. A public school principal is responsible to the district school superintendent, has no policy-making authority and is obligated to implement policies established by the state and the district SCHOOL BOARD and its representative, the SUPERINTENDENT OF SCHOOLS. The principal's authority does not reach beyond the confines of his or her own school. Within those confines, however, the principal is ultimately responsible for all functions of school administration, including budgeting, maintenance, personnel relations, faculty and staff assignments and supervision, records management, student supervision and placement. Depending on district and state regulations, a principal's authority over many functions may be limited. Thus, the district or state may impose a school budget, restrict purchases of supplies ranging from floor wax to textbooks to specific vendors and dictate a wide variety of school functions, including library collections, classroom time schedules, teacher lesson plans, permissible textbooks and courses, athletic and other extracurricular activities, and even building temperature.

Studies by the National Association of School Principals in 1982 found the amount of authority vested in the principal and the degree of autonomy given the school by its district to be two of the four most critical factors in school success. The other two were community support and the competency, diversity and stability of the school staff. Depending on school size, the principal may or may not delegate authority to subordinate school vice-principals and deans. Indeed, most principals work their way up

through the administrative ranks as assistant principals, first in elementary and middle schools, then in high schools. The ultimate career goal for many is a school superintendency.

Synonymous with the HEADMASTER OF HEADMISTRESS position in private schools, effective principals usually attempt to teach at least one course to obtain firsthand understanding of day-to-day classroom problems faced by students and teachers. Principals spend about two-thirds of each day in meetings with individuals or groups of staff, faculty or students. Training for principalships stems from graduate-degree programs in educational administration, with courses in school management, school law, plant and personnel, finance, history and philosophy of education and labor negotiations.

In the late 1990s, there were nearly 80,000 public school principals, of whom 65.5% were male. In contrast, 53.6% of the 25,000 private school principals were women—a parity that women teachers have been struggling to establish in the public school sector for a century. Indeed, the AMERICAN FEDERATION OF TEACHERS was founded in 1916 by a group of predominantly women teachers who saw themselves exploited by predominantly male administrators and boards of education. Although the AFT succeeded in obtaining parity for women teachers in salaries, working conditions and job security, women continue to have difficulty breaking into the male bastion of school administration—especially at the secondary school level—despite relatively more advanced academic credentials and more years of experience than male administrators. Indeed, more than 11% of female principals had doctoral degrees, compared with about 9.5% of male principals, the female principals had an average of four more years of administrative experience than their male counterparts. By 2000, school boards could no longer fight the inevitable, and women principals finally obtained equity with the men. Although male principals still outnumber female

principals—about 47,000 to 37,000—their salaries are on a par across the nation, men and women both averaging about \$66,500.

printing In colonial American education, the publication of textbooks, periodicals and other materials used in instruction and education of children and adults. In the American colonies, printing presses were under tight control of the English Crown. London had been the center of the English printing and publishing industry since 1557, when Elizabeth I granted a charter giving the Stationer's Company sole printing rights in England. Elizabeth also gave wardens the right to search the premises of any printer, binder or seller of books and to seize and burn any volumes that seemed "contrary to the form of any statute, act, or proclamation, made or to be made" and to fine or imprison the printers. Moreover, every new work published had to receive the queen's approval or the approval of her appointees. She gave the church tight control over reprinting pamphlets, plays and ballads and the reprinting and circulation of "all other books of matters of religion . . . either on this side of the seas or on the other side. . . ." These, then, were the printed materials available to the first English settlers in the American colonies.

The first American presses were set up in Cambridge (1638), Boston (1674), St. Mary's City (1685) and Philadelphia (1685), but English censorship laws and limited fonts restricted their output to sermons, almanacs and catechisms. All other printed materials read by the colonists originated from England until 1690, when the *NEW ENGLAND PRIMER* was published in Boston. From 1690 onward, the number of presses began proliferating, as the "Age of Reason" took hold in the colonies, and by 1762, the colonies had at least 40 presses, with at least one in each of the 13 colonies. The result was a flood of NEWSPAPERS, almanacs, magazines, textbooks, manuals, sermons, pamphlets

and other materials. Among the foremost printers of the era were BENJAMIN FRANKLIN in Philadelphia, Christopher Saur in Germantown and a host of New England printers; together these men dominated the industry in the colonies. William Bradford, who left Philadelphia in 1693, was New York's leading printer. The official printer for the colonial government for more than 50 years, he trained John Peter Zenger, whose anti-government newspaper attacked the opinions and actions of the colonial governor. Brought to trial on libel charges in 1735, he was acquitted by a jury that deemed his printed articles to have been the truth and, therefore, not libelous. Although not precedent setting in the legal sense, Zenger's trial aroused public sentiment in favor of freedom of the press, and Zenger's name has been linked ever since to the concept of freedom of the press.

Although the authors of most of the materials published in the 1600s tended to be academics and clerics, self-educated men such as Franklin and THOMAS PAINE quickly outnumbered academics in the 18th century, and publishing expanded its scope to include more and more pamphlets and other materials aimed at influencing public opinion. Much of it violated the letter of the English censorship law, but efforts to suppress such materials diminished as the century progressed for fear of inflaming an already obstreperous colonial population eager for independence. After the American Revolution, the U.S. Constitution's First Amendment expressly forbade Congress from enacting any law "abridging the freedom of speech or of the press." During the pre-Civil War period, however, southern states outlawed all abolitionist literature. It was not until the adoption of the Fourteenth Amendment in 1868 that the constitutional prohibition of CENSORSHIP was extended to all state governments.

prisoner education The formal and informal instruction of juveniles and adults incar-

cerated in prisons for their crimes. Prisoner education in the Americas may have originated in the Quaker colony of Pennsylvania, where William Penn abolished capital punishment, which was a standard penalty for even the most petty crimes in the British colonies. He replaced it with prisons, where local ministers preached to the prisoners and taught some to read the Bible. After Penn died in 1718, the British authorities reinstated the death penalty, which remained in effect until after the Revolutionary War. In 1789, the Pennsylvania legislature substituted incarceration for the death penalty. The Walnut Street Gaol in Philadelphia became the first prison in the United States, but no prisoner education was introduced until 1829, when Pennsylvania developed a system whereby each prisoner was isolated in its Cherry Prison Hill cells, day and night, with nothing but a Bible. Authorities hoped that constant study of the Bible would eventually render each felon penitent, and they thus renamed their prison the Eastern State Penitentiary. The first prison to be so named, the penitentiary was an alternative to the earlier prison model developed at Auburn State Prison in New York in 1819, when prisoners worked together in silence during the day and were housed in separate cells at night. The idleness and isolation at Cherry Hill drove prisoners to madness, however, while the products of prisoner labor at Auburn produced enormous profits for New York State. Auburn thus became the model for most prisons built in the United States throughout the rest of the 19th century.

In 1870, a group of penologists intent on prison reform organized the National Congress on Penitentiary and Reformatory Discipline (now the American Correctional Association). Their work led to the establishment of reformatories for juvenile delinquents, where some youngsters were taught to read, write and calculate and, in many cases, offered vocational education in various manual trades. The

National Congress failed initially in its efforts to convert the goal of adult prisons from one of punishment to one of rehabilitation, but, over the next half-century, as they were joined by social reformers and educators, prisoner education gained a foothold in prisons run by more enlightened wardens. From the beginning, however, prisoner education has been difficult because of high levels of illiteracy and under-education among the inmates.

By the early 1940s, all but the highest security prisons had introduced some form of prison education—usually a mixture of formal primary school education and literacy training mixed with morality training. Prisoner education subsequently expanded to include formal classes in primary and secondary school and even some college-level subjects, along with extensive vocational education to improve prisoner access to jobs after their release. Some nearby schools and colleges regularly send teachers to conduct prison classes. By 1999, there were more than 3,000 part- and full-time educators of inmates. In addition, prisoners generally have access to educational television and correspondence courses in primary and secondary education leading to GENERAL EDUCATION DEVELOPMENT high school equivalency diplomas and higher education leading to college and graduate school degrees.

By the 1940s, too, most juvenile institutions had expanded their facilities to include schools that qualified as separate public school districts in most states. Although far from fully equipped and offering only limited curricula, they nevertheless provided the complete, standard elementary school and middle school curricula and the complete curriculum of the general education track (see TRACKING) of conventional high schools. In the 1990s, however, a surge in the prisoner population brought prisoner education to an abrupt end in many institutions. By 1998, the prison population surged to more than 1.3 million,

about four times what it had been in 1980, while the prisoner population in “jails”—smaller, locally operated facilities holding prisoners incarcerated for less than a year—increased to nearly 600,000. Apart from the staggeringly high prisoner illiteracy rate—about 70% in many institutions—the sheer size of the population made it impossible to expand prisoner education to meet the needs. Even where such efforts were made, periodic lockdowns or the remanding of individual students to solitary confinement disrupted so many prisoner education programs that their number and enrollment became impossible to calculate accurately. Moreover, growing public anger about crime and the apparently luxurious amenities in some prisons led to sharp budget cuts for all but the most basic prisoner needs in many states. Unlike other Americans, however, prisoners do not have any basic legal “right” to an education, despite assertions to the contrary by civil liberties organizations. Although the American Correctional Association’s *Manual of Correctional Standards* states that the “basic purpose” of prisons is “the rehabilitation of those sent there,” no court has ever directly held that a prisoner is entitled to either rehabilitation or education. Indeed, in 1995 the U.S. Congress declared prisoners ineligible for PELL GRANTS, the most important source of aid, accounting for more than 10% of financial assistance for college students across America.

In 2002, however, a study by the Correctional Education Association and City University of New York’s Graduate School and University Center found a correlation between taking classes in prison and reduced likelihood of committing crimes after release. The result was a vast expansion of course offerings, and 43 of 45 state prison systems now offer higher-education opportunities to at least some prisoners. Fourteen such systems, however, accounted for 89% of the 85,000 prisoners

enrolled across the nation—about 5% of the total prison population. Sixty-two percent of prisoners taking college classes were enrolled in vocational courses leading to certificates. The Federal Bureau of Prisons is the largest provider of higher education to prisoners, with a total enrollment of nearly 15,000, or more than 15% of the federal prison population. About 11% of the prison population is enrolled in Texas and North Carolina, 8% in Washington, 7% in Illinois and 5% in California and Colorado. No other state prison system was educating as much as 5% of its prison population, and more than 30 states were educating fewer than 1,000 prisoners each.

private giving See ALUMNI/ALUMNAE GIVING; COLLEGE FUNDING; FOUNDATIONS; PRIVATE SCHOOLS; SCHOOL FUNDING.

private instruction (tutoring) Individualized, one-to-one teaching of a student by a tutor engaged and paid for by the student or the student's family or guardian. Though modern private instruction at the elementary and secondary education levels is largely limited to HOME SCHOOLING, SPECIAL EDUCATION and lessons in instrumental music, it was the most common form of instruction in early modern England and in the American colonies. With education in 16th- and 17th-century England largely reserved for the wealthy nobility, the latter usually engaged skilled masters in each of the basic subjects they expected their children to learn. In addition to classical academics, private instruction usually included dance, music, swordsmanship, horsemanship and other arts and skills. Schools, as such, were largely reserved for boys preparing for the ministry. Although the early settlers in the American colonies were quick to found primary schools, most were in towns of at least 50 to 100 families, thus leaving children in more isolated areas without access to education except by private instructors. Some of the latter

were ministers; others were local parents who were literate enough to teach neighbor children to read, write and calculate for a fee. Still others were itinerant instructors.

By about 1690, there were still fewer than 50 schools in the English colonies. Meanwhile, towns were expanding, trade and industry were thriving and the demand for trained workers soared. Although a swarm of self-instruction books provided many of the young with useful knowledge, apprenticeships and private instruction remained the most effective methods of obtaining a practical education. The former entailed a long and often unpleasant period of semi-servitude; the latter was relatively quick and easy and, though costly, permitted the student to maintain a full-time job that provided funds to pay for his instruction.

The demand for such instruction brought hundreds of private teachers to Boston, New York, Philadelphia, Charleston, New Haven, Albany, Norfolk and other towns to teach surveying, navigation, bookkeeping, accounting, commerce and other practical arts, as well as academic subjects and even such gentle arts as dancing, needlework and fencing. Philadelphia alone had at least 136 private instructors between 1740 and 1776. Private instruction proved a boon for both teachers and students. The latter could take lessons in the morning, afternoon or evening to accommodate their work schedules. For some tutors, private instruction was a full-time occupation, and some went on to found schools of their own. For others with full-time jobs, private instruction proved a lucrative way of augmenting their income. Thus, scribes, accountants, translators, surveyors and even merchants spent their off-hours teaching their trades.

In rural areas, itinerant tutors traveled from town to town, offering all levels of primary and secondary education, often tutoring in Greek, Latin and the classics required for acceptance into college. For communities without gram-

mar schools or a learned minister, such itinerant teachers opened the door to higher education that would ordinarily have been shut to rural youngsters. One provided the necessary classical education for Horace Mann to enroll in BROWN UNIVERSITY in 1819. Some obtained retainers from the wealthy, who continued to educate their children at home, but their broader roll in public education diminished to specific instruction unavailable in school—instrumental music, fine art, the dance and, in some instances, special education. As the number of common schools, grammar schools and academies increased in the 19th century, the need for such private instruction diminished. In the decades following the Civil War, as state-run public school systems emerged along with private preparatory schools for the children of the wealthy, private instruction as a force in American education disappeared. Private instructors either became instructors in schools or founded their own entrepreneurial institutions.

The tutoring industry expanded exponentially, however, after passage of the NO CHILD LEFT BEHIND ACT OF 2001, which allows parents in failing public schools to transfer their children to other scholars or to charter schools and to use \$500 to \$1000 of federal moneys paid to their former schools for private tutoring and after-school and summer school classes. More than 80,000 students in New York City alone are now availing themselves of tutoring services, and 14,000 in Chicago. With \$2 billion in NCLB funds earmarked for tutoring, commercial tutoring exploded into a \$200 million-a-year industry in 2005, and more than 1,800 “supplemental educational services providers” sent an army of tutors into failing public schools across America.

private school In modern American education, any school not operated or directly funded by a governmental agency. Private schools

include religious day and boarding schools, nonsectarian day and boarding schools, military schools, postgraduate schools and special education schools. Private schools are controlled administratively by boards of trustees, who appoint a PRINCIPAL as chief executive officer of the school with full authority over school management and responsibility for implementing the board’s educational policies.

The term private school dates from the post-Civil War era, when the emergence of state-run public school systems left all non-public schools reliant on private funding from individuals or churches. Prior to the establishment of the first state-run public schools in the late 1830s, almost all schools in the United States and in the English colonies that preceded them were, in fact, “private,” in that they were operated by individual, entrepreneurial schoolmasters or schoolmarmes or by ministers of local churches. Although many admitted some students from needier families free of charge, virtually all charged fees for each student whose family could afford to pay and raised the funds to pay for needier children from local parishioners. Early Massachusetts colonial law required such schools to tax property owners to cover the cost of schooling, but there were no church-state or public-private distinctions. The first state-run public school systems established before and after the Civil War provided only elementary school education, and privately operated academies offered the only secondary education. Indeed, New York City did not establish its first public high school until 1897, and as late as 1910, only 10% of American children attended high school. Some 40% of them attended private schools, most of which were church-affiliated.

With 20th-century expansion of compulsory education to include most of the high school years, public school systems expanded, siphoning off the majority of students from private secondary schools. By 2005, more than

6.3 million children, or about 11.5% of America's more than 54.5 million elementary and secondary school students, attended private schools. Nearly 22.5%, or more than 27,000 of the more than 121,000 elementary and secondary schools in the United States, were private, however, thus providing private school students with a much lower average student-teacher ratios—6.2% versus 16.3—and consequently higher-quality education. Private school students score about 7.5% higher than public students at all grade levels in reading proficiency and about 5% better in mathematics proficiency. Within the private school group, about 1,200 independent schools with no religious affiliations represent the strongest academic element. Their extremely selective admissions policies limit students to the most academically proficient and often the wealthiest and most culturally advantaged applicants. Acceptance rates are as low as 12%, and only slightly more than 1.5% receive need-based financial aid (compared with more than 55% at American colleges and universities). Many of the schools were founded in the late 19th century as elite PREPARATORY SCHOOLS to “feed” graduates into selective American private colleges and universities. Groton School fed students into Harvard, for example; Lawrenceville School into Princeton; and The Taft School and Hotchkiss School into Yale. On average, 60% to 70% of independent school students achieve at the highest level of reading and mathematics proficiency, compared with 40% to 50% at other private schools and 15% at public schools. Independent school students spend nearly 11 hours a week on homework, compared with less than 6.6 hours for students at other private schools and less than 5.5 hours a week for students in public schools.

Private schools as a group spend more per pupil on library facilities—\$29 versus \$53—and private school students, as a result, spend 2.2 hours on outside, nonschool reading, com-

pared with 1.8 hours for public school students. Private schoolers watch only about 14 hours of television each week, compared with 21 hours for public school students.

Although private schools students account for only 11.5% of all schoolchildren in the United States, they fill 40% or more of the seats at the 50 most academically selective colleges. As a reflection of the quality of American education, however, the comparisons are relatively meaningless and do not reflect accurately the quality of education provided by public schools. Under full-inclusion laws, public schools are required to accept all students, including the mildly retarded, disruptive, learning disabled, non-English-speaking and so on, while private schools have the luxury of selectivity that skews characteristics of their students toward greater academic motivation and substantial cultural and economic advantages. It is irrelevant to use comparisons of academic achievement of a student population from the highest socioeconomic backgrounds in an elite group of private independent schools with that of the huge public school population to judge academic standards of American public schools. Even within the private school sector, comparisons of student proficiency between inner-city Roman Catholic schools and costly independent schools in wealthy city neighborhoods and suburbs simply codify the obvious and are meaningless in assessing academic quality of either set of schools.

Education at American private schools is not inexpensive. In addition to paying local and state taxes to support public schools that their children do not attend, parents must also pay the cost of the private schools their children do attend. Tuition averages about \$16,500 at private day schools and almost twice that, \$32,000, at boarding schools but ranges from as low as \$3,000 at some inner-city Roman Catholic elementary schools to \$30,000 for some exclusive, academically selective day

schools in and around New York City (plus \$3,000 for transportation, books and lunch). Together with room, board and other fees, the costs of attending the most prestigious, academically selective boarding schools is more than \$45,000 a year—about the same as at similarly selective colleges such as Yale, Harvard or Princeton.

privatization In education, the hiring of private, profit-making SCHOOL MANAGEMENT COMPANIES to operate public school systems under a performance contract guaranteeing specific increases in average student performance within a specific period of time. The privatization movement got under way in the early 1990s as educational achievement levels in some public school systems were found to have fallen to unacceptably low levels (despite constantly increasing public spending on such schools). Founded by teams of business entrepreneurs, corporate training specialists and educators, the new companies pledged to raise average student achievement in public schools or school districts in exchange for complete management and pedagogical autonomy and at a total cost no higher than what the school or district spent per student. In general, the firms demanded three- to five-year contracts.

Privatization got under way in 1992, when the first of the school management companies, Education Alternatives, Inc., of Minneapolis, Minnesota, took over a Dade County, Florida, elementary school. It later won contracts to manage 12 Baltimore, Maryland, public schools and the entire 32-unit public school system in Hartford, Connecticut. Education Alternatives claimed that student achievement rose an average of 0.88 grade at costs that did not exceed what the school systems had been paying per student prior to privatization. Local school boards disagreed, however. Dade County did not renew its three-year contract, and by 1996, both Hartford and Baltimore had canceled

their contracts after student achievement failed to improve.

Seldom necessary in rural communities, where administrative bureaucracies are relatively small, privatization theoretically imposes on public schools the administrative policies of private industry and the pedagogical approaches of independent private schools. Most large urban public school systems are top-heavy with administrative bureaucracies that leave only 45% or less of the total school budget for instructional purposes, compared to a national average of 55% for all public schools. Privatization (again, theoretically) is supposed to bypass such bureaucracies—by doing away with them if necessary—thus cutting total labor costs and eliminating the corruption in hiring and purchasing practices inherent in such large city agencies. Authority for school operations, with the power to dismiss or order retraining of ineffective teachers, is vested in the PRINCIPAL of each school. Administrative savings are used to improve instruction by increasing the number of MASTER TEACHERS, giving each a TEACHER'S AIDE, retraining less effective teachers, decreasing the number of students in each class and providing more individual instruction.

(See also EDISON PROJECT; ENTERPRISE SCHOOLS; PERFORMANCE CONTRACTOR.)

probationary student A student with inadequate academic credentials who has nevertheless been accepted to a school or college on condition that he or she produce academic work at or above a prespecified level. The status is not an unusual one at community colleges, which often provide compensatory education to high school dropouts who, as they mature, recognize the need for a formal education in order to advance in the job marketplace. In addition to acceptable work at the college level, some institutions require probationary students to complete their academic work at lower academic levels and, in the case of high school

dropouts, obtain high school diplomas or their equivalent.

probationary teacher Any candidate for a teaching position, hired on a temporary or conditional basis. Subject to immediate termination, and with no benefits, probationary teachers are usually engaged for specific periods—often a semester or a school year—after which school administrators and perhaps a committee of other teachers evaluate their performance to determine whether to offer them permanent positions.

problem-raising method A pedagogical approach to instruction in history, social studies, science and a variety of other subjects. In addition to acquisition of empirical knowledge, the method is designed to teach students research methods, independent higher-order thinking and strategies for solving complex problems using all the academic tools at their disposal. The problem-raising method begins with the posing of a question—usually of topical interest to students—and asks them to solve it by studying the history and genesis of the problem, solutions that have been tried and the degree of their success and why some failed in part or in whole. Students are asked to propose possible solutions and describe how they would implement them and follow up to determine their success or failure. Depending on the age of the students and the scope of their studies, problems can range from the parochial to the global, from in-house school problems such as ending overcrowding in the lunchroom to regional or national problems such as water pollution to international problems between nations. Problem-solving projects can be limited to an overnight or weekend assignment, or they can be presented as a term-, semester- or year-long project. Problem-solving techniques are applicable in the education of even the youngest children, who generally leap at the

opportunity of grappling with “grown-up” problems, such as hungry people, anger, war and so on.

problem solving The successful resolution of a question by the application of previous knowledge and acquisition of any relevant new data. The teaching of problem-solving techniques should begin in preschool and no later than the early elementary grades. Indeed, studies indicate that children who have not developed higher-order thinking skills by fourth or fifth grade are unlikely to develop them to a level needed to cope adequately with secondary and higher education. Many problem-solving techniques are learned intuitively and through imitation. The five basic steps in problem-solving are: identification of the problem; identification of information that is relevant and irrelevant to the problem; generation of possible solutions by combing the past for similar problems and their solutions or using the imagination to develop new ones; evaluation of possible solutions, weighing the advantages, disadvantages and possible outcomes of each; and implementation of the solution to see if it works. To teach problem solving, successful teachers pose questions to students, then give students much of the responsibility for finding answers. When solving a problem for students, teachers generally describe aloud the step-by-step approach used to arrive at a solution. In addition to asking for answers to problems, assignments should ask students to describe how and why they chose a particular solution.

process/product evaluation A euphemism for program assessment. Developed in the 1980s, the term divides program evaluation into two parts. The process, or method, of evaluation includes all the assessment techniques to be used (monitoring, cost accounting, etc.) and the specific elements of the educational process that will be monitored (teacher style and technique,

school climate, administrator technique, curriculum, etc.). The product, or results, of the program measure student achievement, attitudes, behavioral changes and test scores.

professional education Formal instruction and training for the practice of a variety of vocations requiring specialized academic knowledge instead of or in addition to manual skills. Professional education dates back to the Middle Ages, when the first universities were founded in Europe and Britain to train students for the clergy. Later, they added training for medicine and law. Professional education in England's American colonies, however, was limited to APPRENTICESHIPS, although would-be doctors and lawyers had the costly option of obtaining formal education at English and Scottish universities. The first nontheological professional education in the Americas did not become available until 1765, when the COLLEGE OF PHILADELPHIA (now University of Pennsylvania) established a medical department. Although several other colleges followed suit, apprenticeships remained the primary form of professional education until after the Civil War, when an explosive industrial expansion and a wave of new immigrants created unprecedented demands for skilled professionals. The professions of medicine, law, theology, dentistry, engineering, teaching, nursing and librarianship expanded exponentially. In 1870, there were 372,000 professionals, according to the U.S. Census. By 1890, the total had climbed to 944,000, and in 1910 it reached 1,758,000.

Those years also saw radical changes in professional education, with a gradual replacement of apprenticeship training with formal classroom education at the college and graduate school level. Modern MEDICAL EDUCATION, requiring a bachelor's degree and four years of postgraduate education at medical school, was developed at Johns Hopkins Medical School by WILLIAM HENRY WELCH beginning in 1884. Den-

tistry education developed at Harvard, originally as a subspecialty of medicine at the Harvard Medical School. Modern legal education, requiring a bachelor's degree and three years of postgraduate education at law school, began at Harvard Law School with the appointment of CHRISTOPHER COLUMBUS LANGDELL as dean in 1884.

In addition to the extended formal education at specialized graduate schools, both the legal and medical professions established professional associations, adopted codes of ethics that they enforced and instituted state licensing. These four elements—graduate education, professional certification, ethical codes and state licensing—became the basis of the definition of American professions.

Theology, ironically, became the sole profession not to adopt that definition—largely because of the enormous number of different denominations. Like medicine and law, most theological training prior to the Civil War was obtained through apprenticeships, although the first college in the Americas—Harvard—was founded in 1636 as a theological school. During the 1880s and 1890s, however, the older, long-established Protestant denominations such as Lutherans, Episcopalians, Presbyterians and Baptists, along with Roman Catholics and Jews, instituted formal, professional training comparable to that in medicine and law. Such education usually required combined academic and theological studies leading to a bachelor's degree in theology at four-year colleges, followed by professional graduate studies at three-year seminaries or divinity schools. Newer religious sects, however, often limited formal theological education to study at designated Bible colleges, while many fundamentalist sects required no formal education to serve in their ministries.

Professional education in teaching developed somewhat differently, with different educational requirements for primary and secondary

school teachers and for college and university teachers. Education of college and university teachers at the beginning of the 20th century required a four-year undergraduate education and the bachelor's degree, followed by three years of graduate education in the academic subject the teacher intended to teach, but no formal pedagogical training. Training thus focused entirely on scholarship, to the exclusion of pedagogy. During the last half of the 19th century and first half of the 20th century, elementary and secondary school teachers trained largely at two-year normal schools. These were essentially secondary schools that focused on pedagogy and produced graduates with only a shallow knowledge of academic subjects. The teachers colleges that replaced them extended professional education to four years, leading to bachelor's degrees, and many graduate schools offer master's and doctoral degrees in education. Similarly, preparation for business and management, librarianship, accounting and pharmacy all developed into professions requiring only undergraduate degrees, although optional advanced studies leading to master's degrees and doctorates are available at graduate schools.

The technology explosion following World War II advanced the levels of required education in all the professions and, indeed, elevated some occupations such as journalism and social work to the professional level requiring formal higher education and college degrees for entry-level jobs. Education for medicine, law and dentistry remained wholly graduate education. Education for business, engineering, journalism, accounting, librarianship, teaching and social work moved to postsecondary institutions, with some requiring only bachelor's degrees and others requiring a mix of bachelor's and graduate degrees, depending on the level sought in each profession.

By the mid-1960s, a host of other occupations also sought professional status and began

requiring at least community college-level education and licensing—among them corrections, hotel management, undertaking and others. Some added college-level and even graduate school courses, in what one sociologist called “the professionalization of everyone.” Unfortunately, the increases in remuneration in some professions such as teaching did not keep pace with the increases in required education. The net result was a massive abandonment of professional collegiality in favor of labor union membership and collective bargaining—a shift that earned teaching, nursing and social work the epithets of “semi-professions.”

Nearly all professional schools of education, dentistry, medicine, law, business and other disciplines require appropriate, standardized entrance examinations for admission. Among these are the Dental Aptitude Test, Medical College Admission Test, Law School Aptitude Test, Graduate Management Admissions Test and Graduate Record Examination. Applicants to law, medical and dental schools may avail themselves of clearinghouses that reproduce and distribute applications to all schools to which the applicants apply. Because of the length and complexity of applications and the high odds against gaining admission into certain professional schools, applicants generally apply to a dozen or more schools and rely on clearinghouses to reproduce and distribute applications. The nation's 53 dental schools graduate only about 4,000 dentists a year; the 118 medical schools, about 15,000 doctors; and the 192 law schools, less than 40,000 lawyers a year.

professor A faculty member of the highest academic rank at an institution of higher education. The term dates back to the earliest medieval universities, which trained students for the clergy under clerics who were literally professors of the Roman Catholic faith. Those received into the clergy confessed, or professed,

their faith. The secularization of universities in the 18th and 19th centuries saw the term applied to senior faculty with master's degrees and doctorates, although theoretically the title may be applied to any teacher. Indeed, in France the word *professeur* means nothing more than teacher. In United States higher education, the term professor began to be applied to college and university teachers in the late 19th century, when institutions of higher learning raised their requirements for teaching posts and insisted that "professors" have at least three years of graduate education in the courses they taught. There are now three professorial ranks in United States higher education: assistant professor, associate professor and (full) professor, with the latter almost always requiring a doctorate. Degree requirements for assistant and associate professorships vary from institution to institution. An explosive expansion of colleges in the decades following World War II made it impossible to fill all the new teaching posts with professors with doctorates, and most colleges gladly hired instructors carrying only bachelor's degrees, and even "teaching assistants" in the throes of completing their graduate studies.

In the 2005–06 academic year, annual salaries of professors at universities granting doctoral degrees averaged nearly \$110,000, with the average varying according to institution: nearly \$102,000 at public institutions, \$114,000 at church-related institutions and more than \$131,000 at private, independent institutions. Rockefeller University paid its professors the most in the nation—an average of about \$173,000—and Harvard, Princeton, Stanford, University of Chicago, and Yale paid the next-highest average salaries, all of them above \$150,000. The top salaries at public universities ranged between \$120,000 and \$130,000; University of California at Los Angeles paid the most, \$128,400, followed by New Jersey Institute of Technology, University of

California at Berkeley, University of Michigan at Ann Arbor, Georgia Institute of Technology, University of Maryland at Baltimore and University of Virginia. Among liberal-arts colleges, Wellesley College paid its professors the most—\$123,000. Only Pomona College and Barnard College paid full professors an average of more than \$120,000, while Amherst, Swarthmore, Williams, Harvey Mudd, Middlebury, Claremont McKenna and Bowdoin all paid an average of between \$113,500 and 119,300. The 10 community colleges with the highest professor salaries paid between \$84,000 and \$95,000 a year. Westchester Community College paid the most, followed by Gloucester County, Miami University (Ohio), Union County (N.J.), Queensborough, Hostos, La Guardia, Borough of Manhattan, Bronx, and Kingsborough community colleges.

Salaries of associate professors at doctoral institutions averaged \$73,562 nationally but ranged from \$71,000 to about \$84,500 at the three categories of institutions, while salaries of assistant professors averaged \$62,730 but ranged from nearly \$60,500 to about \$72,000. Professors at institutions offering only bachelor's and master's degrees earned an average of about \$80,000, those at public institutions earned an average of nearly \$79,000, those at church-related schools earned \$78,400 and those at private, independent colleges earned about \$89,000. Associate professors earned an average of about \$63,400, while assistant professors earned an average of \$53,000.

At four-year colleges offering only bachelor's degrees, professors earned an average of more than \$77,000 nationwide, \$66,500 at church-related schools, \$73,400 at public colleges and \$88,000 at private, independent colleges. Associate professors earned \$55,400, \$60,000 and \$65,000, respectively, at church-related, public and private colleges, with a national average of about \$57,500. Assistant professors earned about \$46,000, \$50,000 and

\$53,000, respectively, with a national average of almost \$49,500. Public two-year colleges paid their professors about \$66,000 on average, and private two-year colleges paid them \$75,600. Associate professors earned \$53,400 at public colleges and more than \$56,000 at private schools, and assistant professors earned nearly \$46,500 and \$47,000, respectively, at public and private schools.

proficiency testing An examination administered annually in many states and SCHOOL DISTRICTS to determine whether each student has mastered a subject sufficiently to warrant promotion to the next higher grade. Students who fail to score above a certain level may be retained and forced to repeat the course or grade the following year or be placed in a special class to help them overcome their academic difficulties. Many states also require students to pass proficiency, or MINIMUM COMPETENCY, tests before being allowed to graduate from high school. Proficiency tests assume that all test-takers have had the opportunity to learn the same body of knowledge and that the next grade requires that body of knowledge for success. Most proficiency tests are made up of multiple-choice questions, although a growing number require more complex skill demonstrations such as essay writing.

Although widely accepted, proficiency tests are not without their critics. For one thing, they tend to lead to the RETENTION of disproportionately high numbers of poor and minority students, who invariably fare worse on such tests than advantaged whites. Moreover, there is no evidence that a student who scores one point below the arbitrary cut-off and is retained has significantly less knowledge than a student with a one-point higher score that permits graduation to the higher grade. In addition, there is no evidence that the majority of retained students learn more by repeating the same work. Indeed, there is some evidence that

grade repetition actually retards academic progress of students, who view attending classes with younger students a humiliation. A large proportion of students who are retained become discouraged and eventually drop out of school.

(See also NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS.)

profiles In education, a condensed, albeit comprehensive, description of key characteristics of a school, college or university. Virtually all public and private secondary schools, colleges and universities in the United States publish profiles of their institutions and usually submit such profiles to school guide publishers for inclusion in school and college directories. Profiles of secondary schools include general information about the school, a description of the school plant and its facilities, a description of the faculty and their degrees, the breakdown of the student body by gender, the curriculum, extracurricular activities and athletics, graduation requirements, special academic programs, SAT and ACT scores and college placement of graduating seniors, student activities and, in the case of private schools, costs and admission requirements.

College profiles tend to be wider ranging. In addition to a description of the college, there are descriptions of the student body by gender, race and ethnicity, their range of SAT scores and their high school class ranks; in addition, there is a breakdown of the student body by full- and part-time students. College profiles detail admission requirements, policies and procedures, financial aid programs, housing facilities, campus safety and security, programs of study, academic and sport facilities, graduation requirements and a host of other aspects of college life. Published annually and available directly from each institution, profiles of colleges and schools are also available in various directories in public libraries and sold in

book stores. Among those published regularly are *Barron's Profiles of American Colleges*, Cass and Birnbaum's *Comparative Guide to American Colleges*, *Peterson's Guide to Four-Year Colleges*, the College Board's *College Handbook*, *Peterson's Guide to Two-Year Colleges* and *Peterson's Guide to Independent Secondary Schools*.

Program for Learning in Accordance with Needs (Project PLAN) A pioneering effort in the late 1950s and early 1960s by the American Institutes for Research in the Behavioral Sciences to develop computer-determined, individualized programs of study. Designed for students from preschool through grade twelve, Project PLAN produced individualized programs of study by using computers to collect and process all data relating to a student's school progress and performance. The computer program managed each student's program and produced appropriate instructional objectives and teacher instructional units, thus leaving little for the teacher to do other than supervise the student's learning of appropriate materials.

programmed instruction A teaching technique using specialized books, teaching machines, computers or other electronic devices to present new material in small, sequential units, each of which the student must learn before progressing to the next unit. Programmed instruction emerged from the studies of learning reinforcement by psychologist/philosopher B. F. SKINNER in the 1950s. Each body of knowledge to be learned is divided into small, easy-to-learn units. After presentation of each unit, the student must answer a series of questions and be told immediately whether the answers are right or wrong. If wrong, the student must correct the answer by restudying the unit. The student cannot progress to the next unit without successfully completing the current unit. Individualized programmed instruction allows students to progress at their

own pace. Computer-operated programmed instruction has become routine in the teaching of foreign languages, where it is used for both written and oral training.

progressive education A 19th- and 20th-century educational reform movement that transformed American elementary and secondary schools from scholastic to pedocentric, or child-centered, institutions. Usually associated with American educator/philosopher JOHN DEWEY, progressive education is, at best, a vague term that can mean almost anything any educator wants it to mean. Annoyed by the many educators who pretended to be his disciples, an exasperated Dewey finally urged that the term be dropped from the lexicon in favor of the simple phrase "good education."

Whatever its specific meaning, "progressive" education had its roots in 19th-century Europe—in Switzerland, with the development of Pestalozzian education (see PESTALOZZI, JOHANN HEINRICH) in 1799, and in Germany with Friedrich Froebel's development of KINDERGARTEN education in 1837. Both movements discarded the widely held religious and social belief in predestination and based their pedagogies on the theory that all children were capable of learning. Both movements abandoned the use of pain, punishment and rote learning as pedagogical tools. Both movements also recognized the individuality of the child, allowing each to progress at his or her own pace. And finally, both movements recognized that children learned more from play than they did from strict, formal, direct instruction and rote memorization. Pestalozzian education stressed the use of concrete objects—blocks, for example—as the first step to learning abstract concepts such as numbers. The kindergarten movement allowed youngsters to grow and learn naturally by playing games, singing, listening to absorbing stories and using selected work materials to spawn creativity.

Both movements spread to United States schools in the last decades of the 19th century. In 1874, FRANCIS W. PARKER introduced Froebelian and Pestalozzian education into the public school system of Quincy, Illinois. For the first time in American education, freedom of expression, informality in classroom instruction, relaxed methods of discipline and experiential learning were introduced into the American “common,” or public, school. He replaced traditionally rigid curriculum requirements with flexible curricula geared to student needs and abilities. The results electrified the world of education. Student achievement soared, and Parker was asked to bring his program—by then called the QUINCY MOVEMENT—to Boston and later to Chicago. Called by Dewey the “father of progressive education,” Parker also revamped teacher training in the United States to help them learn the new, nonauthoritarian approach to progressive education.

But if Parker indeed “fathered” progressive education, it was Dewey who refined and systematized it at his Laboratory School at the University of Chicago in 1896. There, he perfected a system of EXPERIENCE-BASED (experiential) LEARNING in which children at all stages of the preprimary and primary level learned academic skills through constructive, entertaining play, with teachers at their sides as mentors and, only occasionally, as disciplinarians. The youngest “played” house, learning a variety of tasks such as cooking, sewing and sawing and nailing wood together to make play furniture—all the while learning the basics of mathematics by measuring, adding and subtracting and basic reading skills by following recipes, patterns and plans.

First graders used skills and crafts learned in kindergarten to “build” a farm, using blocks for each of the buildings and planting imaginary crops on a large sand table. By dividing the table into separate fields for different crops, they learned fractions. To the astonishment of

the world of education, Dewey’s six-year-olds learned to use measuring sticks to divide the fields into halves and quarters and convert inches to feet, yards, acres and so on. They learned volume by counting and measuring bushels. They learned addition and subtraction, as well as denominations of money, by pretending to take their crops to market to sell.

As their mathematical skills reached third grade levels, their reading and writing skills kept pace as they made signs to label crops in the fields. They drew elaborate plans to build the farmhouse, barn and stable, labeling each element of the house with properly spelled words, measuring each section carefully, to be certain they used the right number of blocks. A wrong measurement or calculation often made the house tilt or sent it falling down—to gales of laughter. But Dewey believed his students learned as much from their errors as they did by solving problems correctly.

Second graders studied prehistoric life by building make-believe caves (with blocks and huge sheets of paper) and pretending to live in them. At every step, students combined what they read in books with “doing.” Third graders studied early civilizations, while nine-year-olds studied local history and geography. Ten-year-olds studied colonial history and built a frontier log cabin. Dewey introduced the FIELD TRIP to modern education as another teaching tool that captured children’s imaginations. Sixth graders moved on to more complex projects involving politics, government and economics and scientific experiments in biology, chemistry and physics.

More than just systematizing progressive education, Dewey also interpreted it for the world of education and the world at large, calling it essential for the survival of democracy. In 1899, he published *The School and Society*, which is often called the “manifesto” of the progressive school movement. Calling school an “embryonic” community, he said that

schools must be transformed to make them “active with types of occupations that reflect the life of larger society . . . permeated throughout with the spirit of art, history, and science. When the school introduces and trains each child of society into membership within such a little community, saturating him with the spirit of service and providing him with the instruments of effective self-direction, we shall have the deepest and best guarantee of a larger society that is worthy, lovely and harmonious.”

In *Democracy and Education*, his most definitive work on education, published in 1916, Dewey pointed out that “a government resting upon popular suffrage cannot be successful unless those who elect and who obey their governors are educated. Since a democratic society repudiates the principle of external authority, it must find a substitute in voluntary disposition and interest; these can be created only by education.” Dewey went on to detail for public school teachers the educational goals, methods of study and instruction and the curriculum that were essential to the preservation of democracy. Dewey’s students finished elementary school about two years academically ahead of their peers in conventional schools. The PROGRESSIVE EDUCATION ASSOCIATION conducted an eight-year study, from 1933 to 1941, of nearly 1,500 graduates of Dewey-type progressive schools in the United States and found that they did far better at college than students from traditional schools.

Some would-be inheritors of the Dewey mantle took the concept of “child-centered education” and, without bothering to study his complex (and often confusingly written) works, introduced discipline-free schooling that gave children license to learn whatever they chose whenever they chose to do so. Bearing no relationship to Dewey’s philosophy, such approaches distorted the public perception of progressive education and put it in public disfavor for many years. Although called progres-

sive education, unstructured education is not John Dewey’s progressive education, which is based on teaching children self-discipline, problem-solving skills, responsibility for his or her own learning, and the ideals of democracy, of working in concert with others toward a common goal—all within the context of each child’s capabilities, as determined by his or her stage of physical, emotional and intellectual development.

Progressive Education Association An organization founded in 1919 by a group of private school leaders, university professors of education and philanthropists interested in studying the then-revolutionary ideas of JOHN DEWEY and the progressive education movement. Although universal compulsory education was the law in almost all states, it either went unenforced or was enforced laxly after several U.S. Supreme Court decisions declared the right to work a child’s constitutional prerogative. Leaders of the progressive education movement such as John Dewey were calling for an end to child labor, extension of the school day and school year and strict enforcement of compulsory universal public education, at least until the age of 16. In 1933, the association sponsored the landmark EIGHT-YEAR STUDY, which compared nearly 1,500 college students who had graduated from 30 “progressive” secondary schools with a similar number of students who had graduated from conventional high schools. The study found that progressive school graduates invariably outperformed graduates of conventional schools academically in college. During its 36-year existence, the association proved a powerful force in promoting PROGRESSIVE EDUCATION and EDUCATION REFORM in American schools. It disbanded in 1955.

progressive schools A term applied to the “open” schools that became popular in the

1960s, with students free to direct their own learning at their own pace, wandering from one learning area to another in a partition-free environment. Often confused in the public mind with the progressive education movement of JOHN DEWEY, progressive schools often claim, inaccurately, a philosophical tie to Dewey, who believed in strict, albeit kindly, discipline. The only relationship of progressive schools and the progressive education movement is that both began influencing American educational practices in the 1930s.

(See also MONTESSORI, MARIA; OPEN EDUCATION.)

Project Advance The largest of the 2,000 SCHOOL-COLLEGE PARTNERSHIP programs in the United States, allowing gifted high school students to earn credits for college-level courses while still attending high school. Established in 1973 by the Syracuse University Center for Instructional Development, Project Advance trains appropriate high school teachers to teach freshman college courses, which they can then offer in their high schools to gifted students for college credit. Project Advance has nearly 300 high school teachers teaching college level courses in 10 different subjects to about 4,000 students in more than 100 high schools in five states. The teachers are trained at Syracuse in summer programs and earn the university's title of adjunct instructor.

To qualify for Project Advance, high school students must have finished all available high school level courses in the subject and pass qualifying examinations. The Project Advance curriculum offers the same material and tests given to university freshmen in their introductory courses, and successful completion of each course earns college credits at Syracuse University, which can be transferred to whatever college the student eventually attends. Courses include most standard freshman courses—including English, biology, chemistry, psychol-

ogy and economics—along with specialized courses such as electronic engineering and courses of broad interest such as public policy. Like conventional college courses, students must pay tuition for each course they take. Of the nearly 100,000 students who enrolled in Project Advance courses in the first 20 years of its existence, 98% graduated from college and 80% continued their studies at the graduate level.

(See also EARLY COLLEGES.)

Project English A program to improve teaching of English created in the 1960s by the U.S. Office of Education, which was then a part of the Department of Health, Education and Welfare. The project produced a series of research studies and attempted to establish centers to train teachers to write. Budget constraints eventually affected its work, however, while the expansion of the BREAD LOAF SCHOOL OF ENGLISH and the development of the NATIONAL WRITING PROJECT in 1973 obviated the need for a federally operated project of that nature.

Project on the Instructional Program of the Public Schools A 1959 effort by the NATIONAL EDUCATION ASSOCIATION to identify the most critical issues in American primary and secondary public education. Often called the Project on Instruction, the work produced several reports, including *Schools for the Sixties* and *Schools for the Seventies and Beyond: A Call to Action*. Each raised key questions about American education and proposed numerous solutions. Thus, *Schools for the Sixties* asked 12 questions, such as, "Who should make what decisions about education?" "What is the school's role in dealing with serious national problems such as youth employment and juvenile delinquency?" and "How should the content of the curriculum be organized?" The report provided 33 complex solutions, few of which have yet to be widely implemented in American public schools.

Project Physics A Harvard University effort that produced a new type of secondary school physics course to accommodate the skills of, and attract a larger number of, average high school students. Started in 1964, Harvard Project Physics, as it was originally called, was funded by the federal government and several private foundations, as well as Harvard itself. The project produced a new course that required only a basic mathematics background and structured written materials for grade 9–10 reading levels. It also humanized physics by linking it to ordinary human needs. The course provided teachers with lecture notes, demonstration materials for class and laboratory and multimedia materials. Field-tested in 1967, it was adopted by about 400 schools initially. As its use spread, it helped raise the percent of high school students enrolled in physics from less than 20% in the early 1970s to 41% by 1990.

projects In education, tasks involving independent research, self-directed learning and independent problem solving and designed to supplement classroom and textbook instruction. Projects can be undertaken at all levels of education, from kindergarten through twelfth grade, by individuals or groups and are designed to provide students with experiential learning that illustrates and reinforces knowledge acquired from classroom lectures and textbook readings. Projects do not produce totally independent learning, but they do permit students to assume more responsibilities for their own learning within a secure framework of teacher guidance.

Project Talent A 20-year study that attempted to correlate the aptitudes, education and interests of 440,000 secondary school students with their eventual career choices. The massive study began in 1960 by administering aptitude, achievement and interest inventory tests to students in more than 1,300 public and private

secondary schools. Five-year follow-ups eventually produced student profiles for each of 12 broad occupational groups, along with a host of findings of questionable validity on the educational process itself. Thus, it found that seniors in large high schools performed better in mathematics and science than seniors in small high schools, while student achievement tended to increase as teacher salary level increased. In contrast, all the most recent studies show that students in schools with fewer than 300 students perform better in mathematics, science and SAT scores than students in larger schools. The same studies find that teacher salaries in the states with the highest student scores—Iowa, Kansas, Minnesota, Montana, Nebraska, North Dakota, South Dakota, Utah, Wisconsin and Wyoming—were either average or well below average for the United States, with none ranking above the national average. Of interest because of its size and its longitudinal format, Project Talent was part of an educational trend to predetermine career aptitudes of students as they entered high schools and thus guide them into appropriate educational channels.

promotion (of students) The advancement of a student to the next higher grade in elementary, middle or high school, usually after achieving a predetermined minimum grade-point average and passing achievement or proficiency tests in the current grade. A student who fails to be promoted is said to have been retained, while overachievers may be accelerated, or promoted more than one grade higher. Promotion and RETENTION rates, however, have become notoriously unreliable academic measures because of the development of TRACKING, which groups same-grade students by ability. Thus, instead of being retained and forced to repeat work in a lower grade, a student who fails a course in one track can be promoted with his class and simply transfer to a lower track

that will review the previous year's work and progress more slowly with new work.

propaganda Information that is distorted or presented in a way to influence its recipients rather than to provide them with objective data. Derived from the Latin word meaning to propagate, it acquired its current meaning from the *Congregatio de propaganda fide*, or Congregation for Propagating the Faith, organized in 1623 by Pope Gregory XV to assume jurisdiction over missionaries and other institutions charged with spreading the Catholic faith. Propaganda has been a standard element of education throughout modern history. From the time of Elizabeth I until the end of the American colonial era, textbooks had to be approved by the English Crown and the Anglican Church to prevent their promoting civil dissension. After independence, American textbooks routinely contained propaganda to promote Protestant beliefs and unthinking loyalty to the United States. In American literature, Harriet Beecher Stowe's novel *Uncle Tom's Cabin* was a masterpiece of abolitionist propaganda that swayed world opinion against slavery and that Abraham Lincoln credited with having caused the Civil War. History textbooks in elementary and secondary schools—in the United States no less than in most other nations—have traditionally been replete with propaganda aimed at imbuing schoolchildren with patriotism and loyalty to their governments and, as in Elizabethan times, in preventing civil dissension. Most American states have long required the study of state history for the same reasons.

Ironically, the Constitution's First Amendment guarantees of free speech serve to protect every publisher's right to produce propaganda, and teachers, as government employees, have no choice but to teach it if school boards choose such books as school texts. Because state and local school boards seek to imbue children with a love of state and country, they

often select textbooks laced with propaganda. For decades, some southern states have sought to ban the teaching of evolution and force teachers to teach "creation science." Only a constant flow of U.S. Supreme Court decisions upholding constitutional separation of church and state has forced schools to cease purveying what, in effect, is church propaganda.

Although many skilled teachers attempt to train students to identify and sift through propaganda, their task is usually hampered by public opinion in the case of history and literature and by seductive television advertising that portrays all advertised products—especially those designed for children—as beneficial. Ironically, it was television that helped root propaganda out of many classrooms for several decades. In the 1950s and 1960s, live scenes of civil rights violations contradicted textbook propaganda about African Americans living contentedly in a separate-but-equal society—and turned American and world opinion against southern state governments. Similarly, live broadcasts of U.S. and allied atrocities in Vietnam damaged the credibility of textbooks that cited preservation of democracy as the primary motivation for American participation in the war.

proprietary schools Any privately owned instructional institution designed as a commercial, profit-making enterprise and usually operated for adult students. Proprietary for-profit schools offer as broad and diverse a range of education as traditional educational nonprofit institutions and include ever-expanding numbers of elementary and secondary schools, as well as several thousand two- and four-year degree-granting institutions that offer instruction in traditional classroom settings or via DISTANCE-LEARNING programs over the Internet. The category also includes chains of preschools, tutoring services at all levels, technical institutes and testing companies that assess educa-

tional progress. Although the term *proprietary school*, in the strictest sense, embraces nondegree vocational TRADE SCHOOLS, the term FOR-PROFIT EDUCATION has, since the early 1990s, referred to the huge publicly traded corporations that invaded the educational services sector to wrest a share of the market from state-operated and privately operated nonprofit institutions that had traditionally dominated the market.

The proprietary school movement actually began in the late 19th century as huge factories absorbed most skilled tradesmen and left few independent practitioners of such trades to train apprentices. Those who preferred teaching to production began establishing entrepreneurial schools. Especially well served in the decade following World War I were those Americans who had been forced to work as children and lacked a high school education, as were large numbers of immigrants who had neither a high school education nor a command of the English language. Some prepared men and women for civil service examinations and jobs in government; others prepared tens of thousands of young women for secretarial and other jobs in business; schools of language taught immigrants to speak English—and Americans to speak foreign languages for overseas jobs with American companies.

The post-World War II years saw a huge expansion of the industry to more than 4,000 schools with more than 2 million students. New proprietary schools emerged to help prepare tens of thousands of high school students for college admission tests and college students for graduate school admission tests. Many for-profit proprietary schools developed to fill other practical educational needs born of post-World War II prosperity and the failure of traditional colleges and universities to meet those needs.

As American industry demanded a better educated workforce following World War II, traditional nonprofit institutions, led by acade-

micians with few management skills, staged an unprecedented expansion to accommodate the growing demand. By 2000, however, mismanagement had produced costly overconstruction and cost overruns on many campuses and sent costs of tuition and room and board at the average private nonprofit institution to \$25,000 for resident students and more than \$16,500 for day students, with the most selective institutions charging more than \$40,000 for resident students. By then, too, faculty had unionized, and many professors with lifetime tenure were reaping annual salaries of more than \$100,000—and turning over most of their teaching responsibilities to graduate students—so-called TEACHING ASSISTANTS, who taught undergraduate classes in exchange for free tuition but had few teaching skills and, too often, only a bit more knowledge than many of the students they taught.

Students—and government agencies that loaned billions of dollars to students to pay the rising costs of higher education—demanded better service, quality and affordability, as well as greater emphasis on practical education to improve student earnings potential in the marketplace. Industry's demands also changed. Demand for high-technology skills was so great that some firms were hiring skilled youngsters immediately out of high school and foregoing traditional academic requirements of many old-technology industries. With huge plants and staffs to support, traditional educational institutions were unable to respond to the new market demands, and the best-managed for-profit institutions filled the void. Many had participated in postsecondary education for decades—most of them operating out of temporary rented quarters, with no parklike campuses to maintain. Although most had limited their offerings to skills education that required no academic ACCREDITATION, the profit potential of higher education—and the advent of the Internet—convinced them to expand into

higher education. Since accreditation is based solely on academic standards, for-profit institutions are as eligible as nonprofit institutions. Hundreds of proprietary schools expanded their offerings and began delivering low-cost, accredited higher education—on-site and on-line—and awarding bachelor's and master's degrees—largely in practical fields such as accounting, business administration, computer science, electronics, engineering, marketing, telecommunications, and so on—adapting the curriculum to demands of local and regional industries. By 2003, education services accounted for 7% of the United States gross domestic product, accounting for \$80 billion in goods and services traded each year.

Four basic segments of proprietary for-profit education emerged:

- Higher education companies serving the post-secondary segment of the market, offering, on-site or on-line, associate, bachelor's and graduate degree programs in business and technology, as well as certificate programs attesting to completion of various types of skills training. By 2005, proprietary colleges had established a \$20 billion-a-year industry, having 3,000 actual or on-line campuses across the United States with nearly 1.6 million students, or 10% of the total enrollment in institutions of higher education. Proprietary on-line institutions alone so threatened the revenues of traditional bricks-and-mortar institutions that the latter were themselves setting up for-profit, proprietary on-line facilities. With more than 40% of all students in higher education at least 25 years old, most students enrolling in post-secondary education were seeking new or additional skills either to permit a change in career or to advance existing ones. For-profit colleges allow them to obtain advanced degrees at their own pace (without quitting their jobs) by offering courses at local sites rented by the college, at sites provided by the student's employer under contract with the college or online. In all cases, costs for both college and student were
- far lower than those of conventional bricks-and-mortar institutions with huge plants and full-time staffs. As the higher education industry grew more lucrative, it inevitably drew increasing amounts of venture capital from Wall Street, where huge corporations carved out the most profitable sectors of the education services industry: Apollo Group, Inc. (the largest for-profit college venture, with its flagship PHOENIX UNIVERSITY, 132 campuses in 34 states, and more than 200,000 students), Career Education Corp. (81 colleges, 26 states, 100,000 students), Corinthian Colleges, Inc. (128 colleges, 24 states, 66,000 students), De Vry, Inc. (72 campuses, 21 states and Canada, 50,000 students), Education Management Corp. (18 colleges, 24 states, 30,000+ students), ITT Educational Services, Inc. (70 campuses, 30 states, 30,000+ students), Laureate Education, Inc. (one state), and Strayer Education, Inc. (17 campuses, eight states and D.C., 20,000+ students).
- Performance contractors that assume control of public elementary and secondary schools or establish their own ENTERPRISE SCHOOLS. Led by professional business managers, such schools eliminate the waste in systems built largely on carelessly supervised spending of tax dollars by administrators whose backgrounds are usually limited to classroom teaching. The strategy is largely based on staff reductions. Curriculum is reduced to a BACK-TO-BASICS CORE CURRICULUM that permits hiring fewer but better trained, higher-paid teachers, while administration is reduced to a bare minimum by eliminating almost all back-office paperwork. By 2000, more than 200 public school districts across the United States had signed contracts with private companies that pledged to operate individual public schools and improve student academic achievement. Some PERFORMANCE CONTRACTORS also offered on-line courses—especially ADVANCED PLACEMENT—to high school students by arrangement with groups of schools.
- Corporate training and education firms that contract with industrial and business firms to offer a variety of practical and academic education to corporate employees on the job, in classrooms or over the Internet or all three.

- Educational services firms that sell textbooks and supplies, publish learning materials, operate chains of preschools, provide conventional academic tutoring and help with taking standardized examinations (both on-site and online), and test preparation and testing services, again, either in classroom settings or over the Internet.

(See also CORPORATION COLLEGES AND SCHOOLS; EDISON PROJECT; SCHOOL CHOICE; TRADE SCHOOLS; VIRTUAL CLASSROOM; SCHOOL VOUCHERS.)

Protestantism One of the three major divisions of Christianity; until the late 20th century, the primary force in American philosophical, moral and political thought and, therefore, in education. Of the two other divisions, Orthodoxy and Roman Catholicism, only the latter has had a significant impact on American life and education through the huge ROMAN CATHOLIC system of DIOCESAN and PAROCHIAL SCHOOLS and Roman Catholic colleges and universities.

Throughout the Colonial era and the first century and a half of independence, Protestantism so firmly controlled American education that most educators routinely refer to education in that era as a Protestant *PAIDEIA*, albeit an American Protestant *paideia*. Until the emergence of state-run public school systems in the decades following the Civil War, the majority of American primary and secondary schools and colleges were under the direction of and taught by Protestant ministers or devout Protestant laymen. Even with the establishment of ostensibly secular public school systems, non-Protestants were routinely rejected for teaching positions until after World War II and the passage of federal laws barring racial and religious discrimination in hiring practices. The establishment of a Protestant *paideia* in American schools did not, however, produce a standardized educational system because of the large number of diverse sects within Protestantism.

Although the Waldensians, Lollards and Hussites had rebelled against Catholic teachings in the 12th, 14th and 15th centuries, Protestantism's origins are generally tied to the publication in 1517 of Martin Luther's Ninety-five Theses attacking the indiscriminate sale of indulgences by the Catholic Church to finance construction of Saint Peter's Basilica in Rome. Thus began the Reformation, which, with the invention of the printing press, saw Lutheranism spread throughout Germany and parts of western Europe. A few years later, Swiss pastor Huldreich Zwingli introduced reforms that rejected all practices and doctrines not specifically cited in the Scriptures. In 1536 the French theologian Jean Chauvin, whose name was anglicized as John Calvin, drew up the first systematic exposition of Protestant theology, including a democratically elected presbyterian church government and an educational system that mirrored that of the Catholic Church. And in England Henry VIII established still another form of Protestantism—Anglicanism—that retained almost all Catholic theology and church government but replaced the pope with the reigning English monarch.

By the mid-16th century there were thus three established Protestant churches: Anglicans, Calvinists and Lutherans. Dissenters within their ranks, however, soon attacked established Protestant churches as vehemently as the first Protestants had attacked the Roman Catholic Church. Declaring that the established Protestant churches had not gone far enough in simplifying and democratizing Christianity, the dissenters formed a wide variety of new sects and subdivisions thereof in Germany, Holland, Switzerland and England. Each suffered persecution at the hands of both the established Protestant churches and the Roman Catholics, and many of the smallest, most radical sects fled to the American colonies, beginning with the Puritan flight to New England. They were followed by Congregationalists and Baptists,

who settled other parts of New England. Lutherans, Mennonites and Anabaptists fled to the Middle Colonies, while the established church of England, the Anglicans, controlled only the South.

The diversity of the Protestant settlements produced an equally diverse educational establishment, with Congregationalists and Presbyterians controlling New England education, Quakers and Lutherans controlling mid-Atlantic education and Anglicans (later Episcopalians) controlling southern education until the colonies declared their independence from England. By then, too, there were also deep divisions between conservative Old Light factions and liberal New Light factions within the Congregational and Presbyterian Churches, spawning comparable divisions in the education they offered. Central to their division was the issue of "original sin" and whether a newborn was born innocent and entitled to immediate baptism or whether, born tainted by original sin (of Adam and Eve), he or she had to reach adulthood first and experience a "conversion," or personal discovery of God, before being entitled to baptism. The latter belief predominated and became the foundation of an American pedagogy based on "beating the devil" out of schoolchildren for misbehavior or failure to grasp academic concepts.

The zealotry of each sect and its desire to ensure that its children were raised in the beliefs of that sect destroyed all possibility of establishing a national public education system at the signing of the U.S. Constitution. THOMAS JEFFERSON, JAMES MADISON, BENJAMIN FRANKLIN, BENJAMIN RUSH and others all proposed such a system but were defeated by religious interests as well as industrial interests that wanted to preserve child labor and slavery. As a result, the word education does not appear in the Constitution, and public schools remain in the firm control of the states and their constituent communities to this day.

With independence, Anglicans changed the name of their religion to Episcopalianism and rejected the supremacy of the British Crown and archbishop of Canterbury. They also introduced a measure of democracy into church government that was reflected in their educational practices. The decades leading up to the Civil War, however, split almost every Protestant sect into abolitionist and proslavery factions and, eventually, into southern and northern factions. Although a spirit of ecumenism swept across the United States in the decades following World War II, most of the splits in Protestantism remain often bitter and as deep or deeper than they were at the founding of the Republic. Those divisions inevitably affected education across the United States, creating the vast regional differences evident in public education to this day. At the simplest level, southern refusal to educate slaves and, later, freed African Americans continues to affect the quality of many southern schools and universities. Mormon reluctance to relinquish control of public schools has produced public schools and colleges where religious education pervades the curriculum, often to the detriment of educational quality.

provost In American higher education, the college or university administrator in charge of all academic programs. Often called the vice president or vice chancellor for academic affairs, the provost's authority is second only to the president, to whom he or she reports directly. Derived from the Latin verb *praepone*, to put in front, a provost supervises the deans, library directors and research directors of a university and is responsible for faculty appointments and academic budgets.

Psalter The Book of Psalms from the Old Testament, or a collection of psalms. Although the complete Psalter is a collection of 150 hymns or poems (*psalm* is Greek for "song"),

an abbreviated children's psalter was used for instructional purposes in American schools throughout the colonial era and the first part of the 19th century, when most schools were operated by clergymen. In the first colonial schools of the 17th century, children learned to read by first learning the alphabet from a horn-book, then reading, successively, from a primer, psalter and Bible, which also taught appropriate lessons in Christianity and morality. In his essay *Some Thoughts Concerning Education* (1693) English philosopher JOHN LOCKE advocated the use of the psalter in the teaching of reading. The emergence of secular state-run public schools in the mid-19th century ended its use in nonreligious schools.

psychological services A wide variety of activities supervised by the school PSYCHOLOGIST and usually related to the planning of programs to meet individual student needs, as determined from psychological tests and teacher evaluations. In addition to administering tests and planning in-school programs, psychological services may also include counseling or planning of out-of-school treatment for individual students.

psychological testing In education, the administration by individual schools of a range of nonacademic, standardized examinations to measure student intelligence, personality characteristics, abilities and aptitudes and interests; to evaluate student intellectual, emotional and social development; and to diagnose student educational disabilities. Psychological testing in school has been a center of controversy since the 1960s because of its questionable validity and reliability. Many tests use scores of children from middle-income urban and suburban backgrounds as norms, and minority, rural and poor children tend to fare far worse than culturally and economically advantaged children. Because the tests are

often used to place children in special school programs and classes for slower children, they become an all but self-fulfilling prophecy of doom for disadvantaged children. Even proponents of psychological testing agree that the use of tests to bar youngsters from educational opportunities is unethical without carefully evaluating the youngster's background, resources and motivation. Without equal economic and educational opportunities, children cannot perform on an equal basis on psychological tests. In addition, many critics maintain that measuring student values and personality traits represents an unconstitutional invasion of privacy and usurpation of parental prerogative by school authorities.

psychologist (school) A full- or part-time certified professional with a doctoral degree in psychology and, where required, licensed by state or professional accrediting bodies to test and evaluate student intellectual, emotional and social development and diagnose educational disabilities. School psychologists generally interpret such findings for the faculty and help plan appropriate educational programs for individual students, including INDIVIDUAL EDUCATION PROGRAMS for the handicapped. In addition, school psychologists often provide training in educational psychology and assist individual faculty members in adapting their pedagogical techniques and curriculum to meet the needs of students. Where permitted by law or state regulations, school psychologists may also provide professional counseling to individual students and parents.

(See also PSYCHOLOGICAL SERVICES; PSYCHOLOGICAL TESTING.)

public address systems In education, a voice-transmission system that permits school administrators to transmit a variety of school announcements to students via loudspeakers in each classroom, hallway and student facility.

Public address systems were originally introduced during the public school construction boom of the 1950s and 1960s as a cost-cutting measure that eliminated the need for school auditoria, where students had traditionally gathered for such announcements. In schools without auditoria, a large common room that normally served as a gymnasium could, when needed, be easily and inexpensively converted into a temporary auditorium with folding chairs.

Public address systems have become a source of enormous controversy between teachers and administrators, with the former complaining of constant interruptions of precious teaching time in class for trivial announcements that often may affect only one student in a student body of 500 or 1,000 or more. Public schoolteachers in the early 1990s reported an average of three such interruptions per class, and many educators believe that, before introducing complex new pedagogical techniques, the most effective first step in educational reform of public schools would be to dismantle public address systems and thus give students an uninterrupted 40 minutes to an hour of concentrated teaching and learning.

public school Any elementary or secondary school under control of elected or appointed civil authority, supported entirely by public tax monies, and, with few exceptions, open to all students in a designated district free of any tuition charges. Public schools include elementary, junior and senior high schools and vocational schools. Public schools are controlled by a publicly elected SCHOOL BOARD, which hires a SUPERINTENDENT OF SCHOOLS as chief executive officer for the school district. The superintendent, in turn, delegates administrative powers in each school to a principal, who is responsible for supervising faculty, staff and students and implementing the state and district educational requirements. A study by the National

Association of School Principals found the degree of autonomy given the school by its district to be one of four factors critical to school success. The other three factors were the amount of authority vested in the principal; the degree of community support; and the competency, diversity and stability of the school staff.

The more than 94,000 public schools in the United States constitute only slightly more than 77% of the schools but house more than 88% of America's more than 47.5 million students. In contrast, the 27,000 private schools in the United States represent only about 22.5% of all schools and house only 6.3 million students, or 11% of the nation's school population. There are more than 65,000 public elementary schools that accommodate 87% of kindergarten through eighth grade students and 22,000 public secondary schools, with more than 91% of the ninth grade through twelfth grade population. About 5,300 additional public schools are combined elementary-secondary schools—usually in sparsely settled areas that do not warrant separate facilities for different age groups. Another 1,500 public schools are devoted to special education.

Public schools have been under constant attack since World War II for their failure to provide adequate education, especially to racial minorities and the poor. As late as 1996, NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS testing found only 29% of public school fourth graders and 31% of eighth graders proficient in reading, and only 24% of eighth graders proficient in writing. (The fourth graders were not tested in writing.) Only 20% of fourth graders and 23% of eighth graders were proficient in math, and only 27% of eighth graders were proficient in science. (The fourth graders were not tested in science.) The test results fell well below the standards set in the early 1990s by the EDUCATION COMMISSION OF THE STATES, a cooperative association of state governments organized to improve American public school



The vast majority of 19th-century public schools were for children under 12, the least efficient members of the huge child-labor force on which American industry and farmers depended for cheap labor. Shown here is a typical 19th-century rural public school, a one-room building where a single teacher taught boys and girls of all ages and was expected to perform janitorial duties after school ended. This school was photographed the year Montana first provided for free public schools. (*Library of Congress*)

education. Since then, one by one, each of the states has established standards in core academic subjects and improved teacher training as part of a long-range effort to fulfill the national academic goals of the federal GOALS 2000 program to raise levels of academic achievement in American public schools. But NAEP tests at the end of the school year in 1999 showed absolutely no improvements in

reading, math or science proficiency in either the nine-year-old, the 13-year-old or 17-year-old groups. Astoundingly, average scores remained unchanged by even a fraction of a decimal point in each discipline for each age group.

In 2001, Congress responded with far-reaching federal intrusions into American public school education. Signed into law by President

George W. Bush in 2002, the NO CHILD LEFT BEHIND ACT OF 2001 (NCLB) amended the ELEMENTARY AND SECONDARY EDUCATION ACT OF 1965 (ESEA) by imposing testing requirements on all states and public school districts and requiring every school to demonstrate year-to-year improvements in academic performance or face loss of federal subsidies to education. Aimed especially at schools with disadvantaged children, NCLB allowed parents in failing public schools to transfer their children to other schools or charter schools at school expense, and it encouraged states to replace the curricula and staffs of schools that make no academic progress for four consecutive years. After four years and about \$50 billion in federal investments in public school education, however, NAEP reading and mathematics scores of fourth graders and eighth graders had still not improved.

Public schools date back almost to the arrival of the first English settlers in the American colonies. The English Crown (Henry VI) had established the first “public school” in the English world in 1440, although Eton College was public only in the sense that the Crown provided scholarships for gifted children of nobility. England’s “public schools” are decidedly private today, while what Americans call public schools are called “state schools.” The first American public schools, or COMMON SCHOOLS, were established in Massachusetts with the building of the first churches, where local churchmen could catechize children and ensure their ability to read the Scriptures and remain true adherents of the Christian faith. Although all were public in the sense that they were open to all children, they generally charged fees, although five towns—Dorchester, Charlestown, Boston, Dedham and Ipswich—maintained town-run grammar schools and Salem maintained a town-run petty school. Roxbury had a quasi-public grammar school supported by a system of self-taxation by a

large group of homeowners. In 1647, Massachusetts passed a School Act that required all towns with 50 or more householders to hire a teacher to teach their children to read and write and to pay the teacher with funds provided by parents, where possible, or the general community. Towns with 100 or more householders were required to establish a grammar school under the same terms.

The majority of common schools that emerged during the colonial era and first decades of independence, though public and theoretically open to all, were religiously oriented and usually charged fees. Moreover, they remained open only six to 12 weeks during the idle winter months between the last fall harvest and first spring planting. Some states, such as New York, established public school systems that provided some state funds and required each community to make up any deficits by taxing the parents of schoolchildren. Although they exempted poor and indigent families, few of the latter sent their children to school because they depended on them to contribute to family income. These early systems, however, were hardly public in the modern sense in that they charged parents who could afford to pay for their children’s education. Moreover, the lack of compulsory education and the need of most families for the earnings of their children limited enrollment to the most economically advantaged children. In addition, the school year was abbreviated and, given the lack of any mandated educational standards, the quality of education was barely enough to provide most children with literacy training.

Public schools as they exist today emerged in the 1830s with the founding of the first state public school system in Massachusetts by HORACE MANN. Within a decade, Connecticut, Rhode Island, New York and Pennsylvania had established similar systems, and by the end of the Civil War all former non-slave-

holding states had established extensive secular, tax-supported public elementary school systems. By the end of the century, even the South had established narrowly based public school systems, and most of the North had extended public school education to include high schools. The vast majority of public schools, however, were for children aged five through 13—that is, the least efficient members of the huge child-labor force on which American industry and farmers depended for cheap labor during the 19th century. As a result, few public high schools were incorporated in the first public school systems. Although the first public high school opened in Boston in 1821, by 1860, there were only about 300 high schools in the entire country. By 1900, the number had increased substantially, to 6,000, but only about 10% of American adolescents attended high school because the courts had ruled child labor a constitutional right of children. By 1930, with the passage of state child-labor and compulsory education laws, the number of high schools had increased to nearly 24,000.

Although all community colleges and state colleges and universities are “public” in that they are supported by state tax monies, the designation is seldom applied to public institutions of higher education, almost all of which derive part of their support from student tuition fees and have the right to be selective in their choice of students. About 4% of public secondary schools—so-called **MAGNET SCHOOLS**—are selective in that they require a high level of academic achievement or skill to gain admission and are thus not open to all students within their districts. Tax-supported and tuition-free, they are a target of criticism as “elitist” schools that have no place within the public sector. Supporters of the magnet school concept point out that such schools provide special education for exceptionally gifted children, much as public monies are

used to provide special education for the handicapped and learning disabled.

(See also **BARNARD, HENRY**; **PROTESTANTISM**.)

public school finances The revenues and expenditures of American public schools. In general, public schools have traditionally received 46% of their revenues from local school district property owners, whose taxes are based on a percentage of the assessed valuation of their homes and lands. Another 47.5% of school revenues are from state funds derived from other taxes, which, depending on the state, are contributed to each school according to a complex formula based on the number of students, the number of days the school is open and student attendance records.

The remaining public school revenues come from the federal government to pay for federally mandated programs for school lunches for needy children, special education for the handicapped and learning disabled and for school construction or remodeling to provide accessibility for the handicapped. Although federal contributions to public school education began in 1919–20, they remained an insignificant percentage of public school revenues until the mid-1960s, when Congress began passing a series of education laws ending discrimination in education on the basis of race, religion, gender, sexual preference, or intellectual, emotional or physical handicap. The law forced schools to expand teaching staffs and remodel their facilities to permit access to the physically handicapped. As a percentage of total public school revenues, federal government contributions to help pay for such programs climbed to a peak of 9.8% in 1979–80.

Total revenues of American public schools approached \$500 billion during the 2005–06 academic year, with half coming from state contributions, 40% from local property taxes and 7.5%, or nearly \$40 billion, from the federal government. Many public school systems had the ingenuity to borrow the tactics of private

schools by turning to private entrepreneurship and private giving to raise funds. Their initial efforts increased revenues by more than \$1 billion, or 2.5%. Apart from appeals for private gifts, some public schools set up commercially sponsored, profit-making portals on the World Wide Web for students, parents, teachers and others to obtain a full range of up-to-date school news—school closings, coming events and so forth. Thousands of schools also sold rights to commercial companies to install soft-drink machines in public school hallways and distribute free textbook covers, loose-leaf notebooks and other school paraphernalia bearing the logos of products ranging from sporting goods and clothing to shampoos and cosmetics.

The revenue mix of many school districts has been changing rapidly, however, because of court rulings that deem the use of property taxes to pay for schools to be discriminatory, because low property taxes in poor districts necessarily produce less revenue and, therefore, poorer-quality education than in wealthy school districts. Almost half the states—mostly plains and far western states—managed to eliminate spending gaps between rich and poor school districts by the end of 2005, but 27 states continued to pour more funds into schools of rich districts than poor ones. Disparities reached more than \$1,000 per student in highly populated states such as Illinois, New York and Virginia. For the nation, the average per-pupil spending gap between low- and high-income school districts was \$850. It was \$500 or less in 13 states and ranged between \$500 and \$1,000 in nine states.

Of the \$500 billion in total revenues that school districts receive each year, about 62% is spent on instruction (two-thirds for teachers' salaries and a disproportionately large amount on athletics and recreation), about 10% for school operation and plant maintenance, about 8% for school administration, and 4% to 6% each for "student support" (guidance, health,

etc.), instructional staff services, transportation, and food services. Here are the average salaries and hourly wages earned by members of public school staffs, including administrative, teaching, support and maintenance personnel in the 2005–06 school year:

Superintendents (contract salary)	\$116,244
Deputy/associate superintendents	110,220
Assistant superintendents	99,771
Directors, managers, coordinators, and supervisors:	
Finance and business	78,154
Instructional services	83,279
Public relations/information	66,682
Staff-personnel services	80,568
Technology	66,832
Other areas (food services, transportation, plant, etc.)	68,229
Subject-area supervisors	69,462
Other administrative staff	63,822
Principals:	
Elementary school	76,456
Junior high/middle school	80,261
Senior high school	84,515
Assistant principals:	
Elementary school	63,985
Junior high/middle school	80,261
Senior high school	70,983
Teachers	46,953
Counselors	51,862
Librarians	52,505
School nurses	39,651
Other professional staff (psychologists, social workers, etc.)	54,071
Central office:	
Secretaries	24,887
Accounting/payroll clerks	34,829
Data-entry clerks	26,156
In-school:	
Secretaries	24,887
Library clerks	17,276
Teacher aides:	
Instructional	\$11.40/hour
Non-instructional	11.47
Custodians (non-engineering)	13.10
Cafeteria workers (non-supervisory)	10.29
School bus drivers	15.29

The averages varied dramatically according to length of service and the type of community, with superintendents, for example, earning more than 48% above the average salary in large cities and more than 11% above the average in both medium-sized cities and suburban communities. They earned about 7% below the national average in small towns and more than 21% below the average in rural communities. Principals earned 3.55% more in large cities, 7% more in medium-sized cities and more than 18.7% more in suburban communities, but they earned 5.4% less in small towns and almost 8.9% less in rural communities. Teachers earned 3.6% more than the national average in large cities, 6% more in medium-sized cities and about 16.5% more in the suburbs, but they earned about 2.4% less in small towns and 9.4% less in rural communities. At least part of the differential in the salaries can be traced to higher costs of living in larger communities.

Public School Society A charitable organization founded in 1805 in New York City by Quaker philanthropist Thomas Eddy to provide “for the education of such poor children as do not belong to or are not provided for by any religious society.” Using the LANCASTERIAN SYSTEM of monitorial education, whereby older children tutored younger ones, the society was educating more than 2,000 children a year by 1820. Originally named the Free School Society (until 1826), it obtained most of its funding from the New York State “common school” fund, which had originally been started in 1795 to create a state public school system. Abandoned in 1800, it was resurrected in 1805, with a provision authorizing the distribution of funds to charitable organizations already doing the work of public schools and, therefore, relieving local communities and the state of that obligation.

In 1820, the policy created a public controversy when various churches, including the Roman Catholic Church, demanded a share of common school funds. By then, the Free School

Society had a virtual monopoly over schools for the poor in New York City. Because of its Protestant bias, however, Catholics refused to send their children to society schools, and the Catholic Church stepped up its demands for state funds. The Protestant-dominated anti-Catholic New York City Council refused, and the controversy raged until 1842, when the state legislature passed a law establishing a BOARD OF EDUCATION in New York and placed society and all other charitable schools receiving state support under the new board’s jurisdiction. Although the society disbanded in 1853, its former schools and most other public schools retained so Protestant a bias in their curriculum that the Catholic Church built its own alternative Roman Catholic school system in New York. By 1860, there were two school systems in the city, one public, with 153,000 children enrolled, but an average daily attendance of only 58,000; the other, Roman Catholic, with 14,000 children in attendance.

public service In secondary school education, an increasingly prevalent element of the curriculum, requiring each student to perform a specific number of hours of volunteer public service. Designed to teach adolescents a sense of social and civic responsibility, public service programs vary widely and take a variety of forms. A common requirement in private schools, an increasing number of public high schools now require students to perform a minimum of 30 hours of public service a year outside normal school hours, or 120 hours over four years, to graduate from high school. Some allow needy students to fulfill the requirement by obtaining paying public service jobs in park maintenance work or public recreation facilities. Volunteer work may include experiences in day-care centers, nursing homes, feeding stations for the homeless, hospitals and other social service institutions or work in cultural institutions such as botanical gardens, museums and public-sponsored theater projects. Public service also requires

students to meet weekly in appropriate age groups to review their individual experiences, raise questions and provide mutual help in solving individual problems associated with such work.

(See also AMERICORPS.)

publishing The production—in print or electronic format—and distribution of books, periodicals and other printed documents for the general public and for specialized audiences such as school and university students. Derived from the Latin *publicus*, or “public,” publishing is as old as the written word. But publishing in the modern sense only began about 1438 with Johannes Gutenberg’s invention of the printing press in Germany, with movable type and oil-based inks. Publishing remained a printer’s craft until the mid-19th century, with many printers printing their own or their acquaintances’ tracts for relatively local distribution. Well into the 19th century, an individual entrepreneur needed only about \$200 to become a “publisher” with a used press and several fronts of type.

Some printers managed to distribute their books beyond their own localities when their books attracted enough attention. The works of THOMAS PAINE are an example. But the lack of copyright laws made publishing in the modern sense impossible. By the time a local printer could reprint an original work and have it transported to another state or country, printers in those areas had already glutted the market with their own copies. A few book printers in the early 19th century recognized the value of mass sales, however, and those that produced Bibles and early dictionaries profited from much broader circulation and sales. One of the earliest printers, and generally regarded as the first true publisher in the modern sense, was ISIAH THOMAS. Thomas was first to recognize the potential of a captive “mass market” in education after the Revolution, and he began producing textbooks for schools throughout New England. Thomas recognized

the superiority of NOAH WEBSTER’s speller and grammar, Nicholas Pike’s arithmetic and works of literature appropriate for schoolchildren.

Thomas launched what became a golden age of early publishing, with education at its core. Of 2.5 million books published in 1820, 750,000 were schoolbooks. The industry total climbed to 3.5 million in 1830, with schoolbooks accounting for 1.1 million; to 5.5 million in 1840, with schoolbooks accounting for 2.6 million; and to 12.5 million in 1850, with schoolbooks accounting for 5.5 million. Education had become the heart of publishing, and publishing had become the heart of education. SAMUEL GRISWOLD GOODRICH replaced Thomas as the leading American publisher, “reigning” from 1816 until his death in 1860. Goodrich published a myriad of textbooks and children’s works, including the *Peter Parley* books and a series of anthologies for children. Like the printers of earlier times, Goodrich authored many of the books he printed, commissioned others and reprinted popular British and European works.

The first true publishers in the modern sense were the brothers James, John, Wesley and Fletcher Harper, who accepted and printed original works of American authors, commissioned some works of their own and reprinted popular European works. Unlike Goodrich they did no writing; they published the works of others, and in only 14 years, beginning in 1816, they became America’s leading book publishers. They borrowed a then-popular British publishing practice of producing series called “libraries.” Recognizing that child labor practices and a lack of public schools had produced a generation of illiterate Americans, the Harpers fed an unquenchable national thirst for education by producing the Family Library (187 titles), the Classical Library (37 titles), the Library of Select Novels (36 titles), the Boy’s and Girl’s Library (32 titles), the Theological Library (nine titles), the Dramatic Library (five titles) and the School District Library, which fed schools with six different

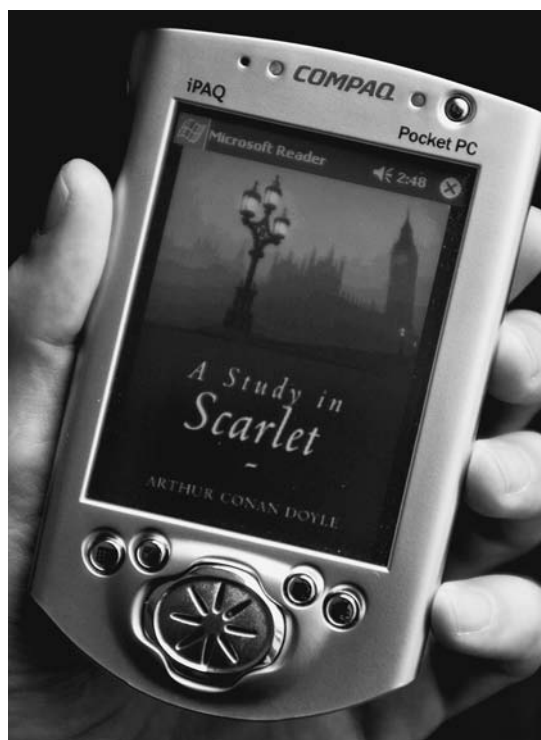
series with a total of 295 titles. In effect, they established educational curricula for homes, libraries, churches and schools, and they educated hundreds of thousands of Americans, bringing them the works of SIR FRANCIS BACON, JOHN LOCKE, THOMAS PAINE and other philosophers, along with works of history, biography, science and literature.

Not all efforts to market “libraries” succeeded. In 1836, a group of eminent academicians announced plans to publish the American Library for Schools and Families. Calling themselves the Society for Diffusion of Useful Knowledge, they modeled their program after the Harper Brothers venture, but, unlike the Harpers, they never succeeded in publishing, much less marketing, a single book. Secular publishers such as the Harper Brothers did, however, have competition—largely from religious publishers such as the AMERICAN BIBLE SOCIETY, AMERICAN TRACT SOCIETY and American Sunday-School Union, whose religious publications and Bibles far outsold Harper Brothers publications. But the emergence of publishers such as the Harpers prevented religious publishers from monopolizing American education and eventually opened the way toward secularization of public education.

In the late 1900s, computer technology permitted the growth of desktop publishing, which allowed publishers to use computers to store text and images and either print them on-site or transmit the work via the Internet for buyers to download the materials from their own computers. By 2000, additional technological advances allowed publishers to produce books on CD-ROMs as well as on DVDs (digital video [and/or versatile] discs), each of which could hold several million pages of text and images, and combine these with video. Because DVD digital books could be updated via the Internet, electronic publishing all but eliminated the need for textbook publishers to produce costly periodic revisions of entire texts to update materials therein. It also eliminated the

possibility of books ever going out of print and becoming unavailable.

Textbook publishers have embraced electronic publishing enthusiastically, with some producing “e-textbooks” at half the price of hard-copy tomes. Some e-books include search engines to extract data and course-management software to highlight and organize materials, produce outlines or piece together essays. One group of publishers has worked with dental schools to digitize, in a single, two-ounce DVD, the 2.2 million pages, 300,000 images, 400 pounds of textbooks and 20 hours of video that make up required out-of-class study materials for the standard four-year curriculum at American dental schools. The disk costs no more than the combined costs of all the books



E-textbooks, read on a handheld reader such as this, generally cost less than the print version and are cheaper for publishers to produce.

and materials it replaces, about \$6,000, but can be updated at will.

In less technical areas, many publishers are able to produce “e-textbooks” at half the price of hard-copy tomes—and in minutes instead of months. In 2000, McGraw-Hill began producing electronic versions of many of its best-selling textbooks and, on request from professors of well-attended courses, producing customized electronic textbooks for specific courses, combining lectures, articles and chapters of specific books into a single e-text. Thomson Higher Education offers e-textbooks under the Advantage Series imprint at half the price of paper versions, as does Pearson, with its Safari-X imprint, and Houghton Mifflin. Online textbooks combine the advantages of books with search engines that can and course-management software. Some, but not all, can be downloaded in their entirety into hard-copy format, and all can easily be updated periodically by author, publisher and reader without publishing an entirely new edition. College bookstores usually offer electronic textbooks at two-thirds the price of hard-copy versions and, at some colleges, offer recordings of all the lectures of various professors, thus obviating the need for students to attend those lectures or take notes. Purdue University has recorded lectures from 70 courses that students can download into digital-audio players.

In addition to textbook publishers, publishers of scientific journals are digitizing their articles, and, indeed, two digitized libraries of scientific articles have been assembled—one at the National Institutes of Health’s National Center for Biotechnology Information and another dubbed Open Archive by a group of scholars at the University of Southampton, England.

(See also LIBRARY; TEXTBOOK.)

Puerto Rico Officially, the Commonwealth of Puerto Rico, a Caribbean island freely associated with the United States since 1952. Prior to that, it had been a territory ceded to the United

States by Spain in the Treaty of Paris that ended the Spanish-American War in 1898. In 1917, the U.S. Congress granted full citizenship to Puerto Ricans, and ever since the island population has remained divided between those favoring independence, those favoring statehood and those favoring continuation of the current status as an American Commonwealth. The peculiar status leaves Puerto Ricans free to govern themselves, much like the people of any state. They are exempt from United States federal taxes and cannot vote in U.S. federal elections, but they are subject to the U.S. military draft.

As citizens, however, they are free to come and go to the United States mainland at will, with no passports. Although wealthy in comparison to other Caribbean islands, Puerto Rico was a poor, sugarcane economy during the first half of the 20th century, with average family income well below that in the poorest of American states. The result was a mass migration to the United States after World War II—especially to New York, New Jersey and Florida, the mainland destinations of most flights from Puerto Rico. From fewer than 100,000 immediately after World War II, the Puerto Rican population on the United State mainland grew to more than 3 million by 2000, with 35% living in poverty. Nearly half live in New York or New Jersey. Unlike other immigrant groups in New York, Puerto Ricans have strongly resisted the efforts of public schools to Americanize their children, and they have been successful in establishing bilingual education in some New York City public schools to preserve Spanish as their primary language of instruction. The proximity of Puerto Rico and the ease with which Puerto Ricans can travel back and forth has transformed Puerto Rican migration into a process of commuting that often means the temporary removal of children from New York City schools during the academic year when their parents return to Puerto Rico.

In Puerto Rico itself, the first primary school was founded in the early 19th century by Roman Catholic missionaries from Spain. The island

now has about 1,600 public elementary and secondary schools, with total enrollment of nearly 600,000 students. Although a staggering 80% live in poverty, the schools have succeeded in raising the literacy rate from 67% just after World War II to 90% today. The island's oldest institution of higher learning is the University of Puerto Rico, a public institution founded in 1903 that now has 11 campuses with a total enrollment of 70,000. There are eight other public four-year colleges, among them the specialized Conservatory of Music and the Escuela de Artes Plasticas, or National Art School. There are 39 private colleges, the largest being the Inter-American University of Puerto Rico, which was founded in 1912 and has 10 campuses. Of the other private colleges, 19 are for-profit institutions. Total college enrollment in Puerto Rico reached nearly 210,000 in 2005—more than three times what it was four decades earlier, when the island's poverty sent hundreds of thousands fleeing to the mainland. Ironically, only about 13% of mainland Puerto Ricans aged 24 years or older have bachelor's degrees, compared with 24% of Puerto Ricans on their native island. One reason has been the transformation of the island from an agricultural economy dependent on sugarcane to an industrial economy, based on huge oil refining, chemical and other industrial installations, as well as a sizable tourist industry, all of which need a skilled, educated workforce. The result has been a dramatic rise in average family income from \$5,400 in the 1950s to more than \$37,200—still more than 13% below the average family income for the U.S. mainland, but high enough to rank ahead of 11 states.

pull-out program A school plan under which students with special needs are “pulled out” of their regular classrooms for a period or two to receive special instruction in classrooms designated as RESOURCE ROOMS. The latter may be established for a wide variety of special instruction, such as remedial reading or math-

ematics, speech therapy or simply extra tutoring. Some schools provide pull-out programs with a resource classroom for the academically gifted to work together on special projects or accelerate in specific subject areas. Like so many aspects of education, pull-out programs are not free of controversy. Students pulled out of their regular classes for special instruction are often subject to humiliation by their regular classmates. Moreover, pull-out students often miss valuable experiences and learning opportunities while they are out of their regular classes. Many private schools avoid such problems by scheduling all special instruction either before or after school or during a student's free periods during the school day.

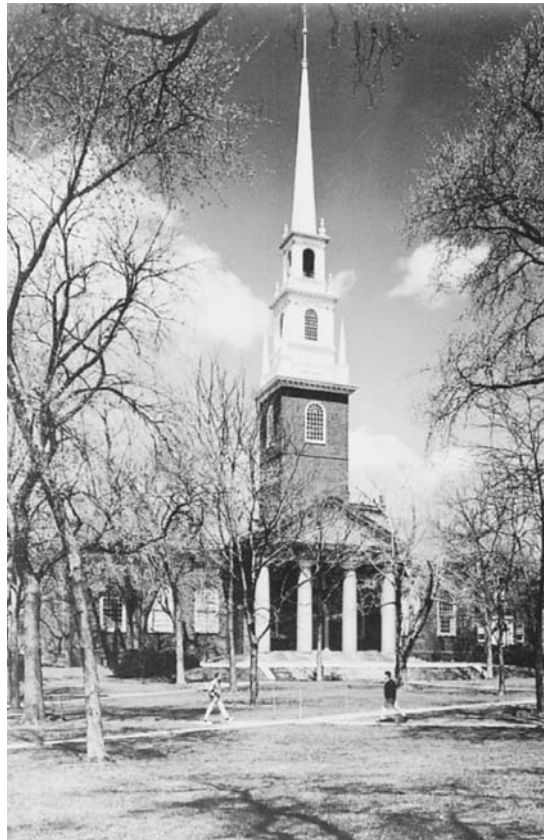
pupil accounting An individual and cumulative record-keeping system for all student data, including admission, registration, attendance, discipline, work permits, home addresses, home neighborhoods, family characteristics and all other statistical information needed for a census of the student population in a school and district.

pupil personnel services A cluster of non-academic services designed to help students adjust to and obtain maximum benefits from school. Borrowing its title from the business world's array of personnel services for employees, pupil personnel services include GUIDANCE, CAREER COUNSELING AND PLACEMENT, assessment, attendance taking and follow-up, PSYCHOLOGICAL SERVICES, social work, health, speech and hearing therapy and SPECIAL EDUCATION. In some larger schools, pupil personnel services have their own administrative structure, apart from instructional services and management/administration services.

Puritanism A dissident religious movement within the 16th-century Church of England. Puritans objected to the Elizabethan Settlement

of 1559, which gave the queen complete jurisdiction over the church and forced all church members to take and abide by a supremacy oath. The Settlement also restored the use of the rites and ceremonies of the *BOOK OF COMMON PRAYER*. The Puritans viewed the restoration of episcopacy, or governmental hierarchy within the church, as a return to Roman Catholicism, from which the Church of England had seceded under the reign of Henry VIII.

Targets of harassment, they fled England for sanctuary in Holland. Repelled by “the great licentiousness” of Dutch society, they returned to England and, finally, set sail for the American colonies aboard the *Mayflower*. Landing in Plymouth in 1620, they set out to establish their own Zion, a community of “visible saints,” living “as a city upon a hill. . . .” Education immediately became the most important instrument for transmitting their beliefs to their children. Although few of the initial Puritan settlers had any formal learning, they were followed, a decade later, by the Great Migration of Puritans, whose ranks included an extraordinarily large number of university-educated men. By 1646, more than 130 learned Puritans had reached Massachusetts—100 from Cambridge University and 32 from Oxford. There were 37 B.A.’s and 63 M.A.’s. Ninety-eight became minister/teachers, 15 became lay teachers, 27 became public officials, five went into business and three into medicine. In the 26 years after their initial arrival, the Puritans had founded at least nine schools in Dorchester, Charlestown, Boston, Dedham, Cambridge, Ipswich, Newbury and Roxbury, and Harvard College, the first in the American colonies, in Cambridge. They also passed the famed “Old Deluder Satan Act,” or Massachusetts School Act, which ordered all towns with 50 householders or more to hire and support a teacher for the children of their community and all towns with 100 or more householders to establish a grammar school. In effect, the Puritans were responsible for establishing the first compulsory, universal public education system in the New World. Their efforts permanently



Puritan churchmen founded Harvard College in Cambridge, Massachusetts, as a school to train new ministers. The nondenominational Memorial Church today serves as a center of religious life at Harvard. (*Library of Congress*)

established public education as a major priority in American life.

The Puritans as a sect disappeared in England and the American colonies with the restoration of the Stuarts to the English throne in 1660. Puritans in England were reabsorbed by the Church of England, while the majority of colonial Puritans joined the Congregationalists. Calvinists both, they despised episcopacy and believed in the doctrine of original sin, which claims that every human is tainted with the original sins of Adam and Eve until he or she experiences “conversion,” or the personal discovery of God.

Encyclopedia of
**AMERICAN
EDUCATION**

Third Edition



Harlow G. Unger

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 **Facts On File**
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Q

quarter (academic) One of four terms making up the academic year in colleges and universities that operate on a calendar-year basis rather than the traditional 38-week academic year, stretching from September to May or June. The first colleges in the British North American colonies operated year-round, with the academic year divided into four quarters, with a two-week “vacancy” (vacation) for students and faculty after each quarter. Vacancies usually coincided with the planting in early spring, the peak heat of midsummer (the July 4th holiday after independence from Britain), fall harvest and the Christmas–New Year festivities. At institutions operating by the quarter system, three quarter terms generally equal the conventional academic year at other colleges, with the fourth quarter stretching over the summer months. Students at such colleges are obliged to attend classes for only three of the four quarters during any given year. Some colleges and universities use a variation of the quarter system by dividing the year into thirds, with two of the three terms equal to the traditional 38-week academic year and the third occupying the summer months. The object of the quarter-term system is to permit students to take fewer courses in each quarter but to study them in greater depth.

quartile One of four equal groups in a distribution of scores, with 25% of the scores in

the lowest quartile, 25% in each of the two middle quartiles and 25% in the highest quartile. Quartiles are quicker and simpler for teachers to determine than percentiles in working out a distribution of classroom scores and grades.

Queens College An institution of higher education founded in New Brunswick, New Jersey, in 1771 by leaders of the Dutch Reformed Church in response to the founding of King’s College (now Columbia University) in New York City. King’s had been formed by a combined group of Dutch Reformed and Anglican ministers, and conservative Dutch Reformed ministers feared such unity would eventually see the Reformed Church reabsorbed by Anglicanism. To counter that possibility, a group of ministers and elders held a conference in 1755 and determined “to plant a university of seminary for young men for study in the learned languages and in the liberal arts and who are to be instructed in the philosophical sciences; also that it may be a school of the prophets in which young Levites and Nazarites of God may be prepared to enter upon the sacred ministerial office in the church of God.” After years of fund-raising and bickering over its purpose, the college finally opened in 1771, and its purpose broadened to “the education of youth in the learned languages, liberal and useful arts and sciences,

and especially divinity; preparing them for the ministry, and other good offices.”

Finding itself in the middle of one of the strongest concentrations of British troops in the American colonies, the college moved eight miles west of New Brunswick during the Revolutionary War. In 1825, it changed its name to Rutgers College to honor the American colonial patriot and philanthropist Henry Rutgers (1745–1830), who had contributed generously to the college to help it rebuild following the Revolutionary War. Facing a gradual decline as a private, independent college, Rutgers became New Jersey’s state college in 1945. Officially renamed the State University of New Jersey, Rutgers, it subsequently expanded into a major institution of higher education, with 12 undergraduate and 10 graduate schools in New Brunswick, Newark and Camden offering hundreds of baccalaureate, master’s and doctoral programs.

questioning A pedagogical device as essential to the classroom learning process as lecturing, DIRECT INSTRUCTION and demonstration. Although always appearing spontaneous and interested, skilled teachers plan questioning strategies carefully, using one of two basic models. The Hyman model categorizes questions as definitional, empirical, evaluative and metaphysical. The Harris-Smith model categorizes questions as identification, analysis, evaluation and application.

Questions in the broad-based Hyman model progress from the absolute to the abstract, from questions demanding simple recall to questions demanding higher-order THINKING skills. The simplest category is definitional questions, which require students to define words and phrases. Empirical questions require students both to recall facts and their interrelationships (for example, whether a president is a Republican or a Democrat and the consequent economic or foreign policies).

Evaluative questions demand recall of facts and a “learned” opinion, expressed with supportive facts (for example, why a poem is “good” or “bad” literature). Metaphysical questions require students to recall facts (the contents of a poem, for example, or a piece of music) and relate them to profound philosophical trends of thought (for example, the question of the existence of God raised by Samuel Beckett’s play *Waiting for Godot*).

The Harris-Smith model is a bit less complex and more applicable to the typical elementary and secondary school classroom. Identification requires students to recall facts; analysis requires reasoning based on reading; evaluation asks the student to compare data with accepted norms; and application asks students to use or demonstrate newly acquired information in practical demonstrations such as laboratory experiments in science courses.

Quincy Grammar School A Boston school where the modern system of graded schools was introduced in 1848. In an effort to reduce classroom overcrowding and establish order and discipline, the innovative educator John D. Philbrick (1818–86) reorganized the school’s crowded classes by grouping students according to age, with each age group in a separate, self-contained classroom with its own teacher. To establish order and discipline, he replaced two-pupil and multiple-pupil desks with single-pupil desks and expanded the curriculum by adding drawing and music.

Quincy movement A pedocentric educational trend that started in Quincy, Illinois, public schools in 1875 and was a forerunner of progressive education. Started by superintendent of schools FRANCIS W. PARKER, the Quincy movement added the kindergarten to primary education and introduced progressive educational methods developed in Europe by FRIEDRICH FROEBEL, JOHN HEINRICH PESTALOZZI and

others. Parker himself carried his Quincy educational innovations to Boston and, later, to Chicago, where he established a teacher training school that sent his students to schools across the United States.

quinmester plan An innovative, albeit short-lived plan of school reform and curriculum reorganization that spread the academic year over the entire calendar year and divided it into five nine-week terms, with students required to attend at least four of them. Introduced by the Dade County Public Schools in 1971, the scheme fulfilled the state's requirement that students attend school 180 days a year while permitting students who wanted to accelerate to do so by enrolling in all five quin-

mesters. The program proved unworkable, however, because the flexibility it provided for teacher and student vacations often left essential classes undermanned or underattended, with teachers off on holiday during a quinmester when student attendance was high and vice versa. Although the plan was abandoned in 1978, it may have been ahead of its time. Subsequent deterioration in levels of academic achievement by American high school students have provoked calls for a longer school year. At the time, the school year in the Soviet Union, East Germany, China and Japan, all of whose students scored substantially higher than American students in math and science proficiency tests, averaged 240 days, or 35% longer than the average American school year of 178 days.

R

race In education, a class of people with common, identifiable and presumably inherited characteristics. Most anthropologists classify humans into three races: *Caucasoid* (whites), *Mongoloid* (Asiatics) and *Negroid* (blacks). The U.S. Department of Education and other American government agencies, along with the entire educational establishment, keep detailed academic and other records, categorized by race, as well as by certain national and ethnic origins, such as data for *HISPANICS*, *AMERICAN INDIANS* and *Pacific Islanders*. For the first 250 years of white settlement in North America, the vast majority of blacks were enslaved by whites. After emancipation in 1863, state laws in much of the United States segregated them for an additional century from white life and opportunities.

Although legally free, blacks continue to suffer far higher rates of economic and cultural deprivation in the United States than do whites. During the last quarter of the 20th century, 26.1% of American blacks remained consistently below the *POVERTY* level, while the percentage of whites below the poverty level dropped steadily from nearly 18% in 1960 to 10.5% in 1998. During those same years, the poverty rate for the nation as a whole dropped from 22% to about 12.7%.

African-American educational achievement mirrors economic conditions, with the functional illiteracy rate among blacks at 12%,

compared to less than 2% among American whites. According to U.S. Department of Education figures in 2000, 37% of all blacks in the United States had failed to complete high school, compared to 22% of all whites. Only 11.4% of blacks held bachelor's degrees, compared to 21.5% of whites. In 1997, 60% of black high school graduates were enrolled in college, compared with 67.5% of white graduates. Moreover, proficiency of black elementary and secondary school students in reading, writing, science and other academic disciplines was substantially lower than that of whites. Scores of college-bound black high school students on verbal and mathematics *SCHOLASTIC ASSESSMENT TESTS* were 17.5% and 19.6% lower, respectively, than those of white students, while scores of *ASIAN AMERICANS* were only 6.8% below those of white students and 8.4% higher than white students in mathematics.

In an effort to smooth out such differences in academic achievement, and ultimately reduce the economic deprivation perceived as the cause, the federal and state governments, along with the entire educational establishment, began establishing a broad array of *COMPENSATORY EDUCATION* programs 1963, the 100th anniversary of the Emancipation Proclamation. At the most elementary level, the federal government sponsored the establishment of the huge *HEAD START* program in preschool education to lift the level of school-readiness skills of

culturally disadvantaged children. At the elementary and secondary school levels, a wide array of remedial instruction is now a standard element of the school curriculum in disadvantaged areas. At the college level, most community colleges, as well as many state colleges and universities, adopted variations of open-enrollment admissions policies that admitted all applicants, regardless of high school grades and entrance examination scores, and, where necessary, provided remedial instruction to help the culturally disadvantaged cope with college-level academic work. Although academically selective private and public colleges maintained high academic standards for admission of most applicants, many adopted AFFIRMATIVE ACTION admissions policies that applied lower standards for black applicants “in the interests of diversity.” Indeed, institutions as notable as Duke University, the University of Virginia, Washington University in St. Louis, Rice University in Houston and many others established merit scholarships awarded on the basis of race alone.

By the late 1990s, affirmative action had produced dramatic improvements in the percentage of African Americans attending college—60% versus only 24% in 1991—and 11.4% of African Americans had earned bachelor’s degrees, compared to only 7.5% at the beginning of the decade. By the end of the decade, however, affirmative-action programs and race-based admissions and scholarship grants to minority students had come under attack for reverse discrimination against more qualified white applicants. In 1995, the U.S. Supreme Court refused to review a lower court ruling that declared publicly funded race-based scholarships unconstitutional, and by the early 2000s, most colleges and state boards of higher education had abandoned the practice.

In 1996, the people of California overwhelmingly approved a referendum banning racial and gender-based preferences in govern-

ment hiring and contracting and in admissions to public colleges and educational institutions. After a federal court upheld the constitutionality of the ban the following year, other states, including Maine, Mississippi, Texas and Washington, followed California’s example by imposing legislative or court-ordered bans on affirmative action programs in college admissions and financial aid. Other states and cities across America followed suit, all but ending affirmative action in college admissions.

The end of affirmative action produced a decline in applications and enrollments of black and Hispanic students to the 200 most selective American colleges and universities, but the rest of the 4,000-college universe—made up largely of institutions with OPEN ADMISSIONS policies—saw minority enrollments grow. By 2005, Asian enrollments had climbed from 4% to 6% of the student population in higher education, black enrollments had climbed from 9% to 12% of all university students and Hispanic enrollments had climbed from 5.6% to 10%.

(See also AFRICAN AMERICANS; RACE-BASED SCHOLARSHIPS.)

race-based scholarships Financial grants awarded by a college or university to a student primarily on the basis of race, rather than academic, athletic or other abilities. Until 1995, race-based scholarships had been permitted under U.S. federal regulations as long as they were granted to help “remedy past discrimination” and promote diversity on the campus. Race-based scholarships accounted for about 4% of the more than \$3.5 billion in scholarships awarded by four-year colleges in 1992. In 1995, the U.S. Supreme Court refused to review a lower court ruling that race-based scholarships funded with public money at the University of Maryland were unconstitutional because they discriminated against white students. Race-based scholarships funded with private

money, however, are part of a long tradition of privately funded scholarships for students from a wide variety of special groups, including American Indians, Chinese Americans, Italian Americans, Jews, foreign students, women, men, Christians, lineal descendants of Confederate soldiers and "students of Huguenot ancestry," among others.

Although privately funded race-based scholarships are entirely legal and ethical, many colleges hesitate to publicize the availability of race-based scholarships for fear of provoking reverse-discrimination lawsuits by white students who are refused admittance in favor of less qualified blacks (see *UNIVERSITY OF CALIFORNIA REGENTS V. BAKKE*). Most such scholarships are, therefore, awarded without fanfare, usually to black students who might otherwise forgo opportunities to attend a prestigious college because of financial need.

Among the most prestigious institutions that admit awarding race-based scholarships are the University of Virginia, Duke University, Washington University in St. Louis and Rice University. Emory University offers race-based scholarship programs for the top graduates of Atlanta's public schools, whose student bodies are predominantly black, and Rutgers University, New Jersey's state university, awards scholarships annually to minority students who finish in the top 10% of their high school classes and have combined SAT scores of at least 1,100. Called the Carr scholarships, the awards cover about two-thirds of the annual cost for tuition, room and board for New Jersey residents.

racial balance In public education, a student population whose racial and ethnic makeup reflects the racial makeup of the general community. Thus, racial balance in a community whose population is 40% white, 30% Hispanic and 30% black would see the student population made up of roughly the same percentages of each group.

Racial balance in American public schools has been a primary goal of the U.S. federal courts since 1954, when the U.S. Supreme Court outlawed racial segregation in public schools in the case of *BROWN V. BOARD OF EDUCATION OF TOPEKA*. At that time, the Court ordered public schools to desegregate "with all deliberate speed." Although the decision and subsequent federal legislation outlawed de jure segregation, de facto segregation, based on residential patterns, has persisted. Thus, all-black neighborhoods tend to have all-black schools; all-white neighborhoods, all-white schools. Although reflective of neighborhood population, such schools are not considered racially balanced if they do not reflect a broader population of the town, city, county or area beyond the immediate district boundaries. Some communities instituted mandatory, inter-district **BUSING** of schoolchildren to achieve a modicum of racial balance in schools of all-white and all-black districts, but such forced busing was subsequently declared unconstitutional, and racial imbalances persist to this day in neighborhoods where de facto segregation exists.

racism The belief that race is the primary cause of human characteristics and abilities and that some races are inherently superior to others, intellectually, psychologically and physically. There are two broad forms of racism: institutional, practiced by government or business, educational and social organizations, and individual, practiced by one or more persons against a member of members of a different race. Both forms have influenced American education since the first white settlers arrived in the New World. From earliest colonial days, institutional racism barred blacks, American Indians and Asians from most schools. Southern states made it a crime, punishable by fines and imprisonment, to teach blacks to read. Although the Civil War ended legalized slavery in the United States, southern states passed

laws that segregated blacks from whites in public schools for nearly a century, while federal government regulations and local or state ordinances forced most American Indians to attend segregated schools on their reservations.

In 1954, the U.S. Supreme Court ruled that racially segregated schools were inherently unequal and unconstitutional, and it ordered an end to legalized, state-sponsored institutional racism in American education in its 1954 decision in *BROWN V. BOARD OF EDUCATION OF TOPEKA*. Institutional racism in private colleges and universities, however, continued until the U.S. Congress passed the CIVIL RIGHTS ACT OF 1964, outlawing all institutional racism in public facilities in the United States. Passage of subsequent federal, state and local laws discouraged overt institutional racism in education, although some subtle forms inevitably persisted. Among these was the failure of some schools to achieve racial balance in their faculties and thus give students of each race adequate numbers of adult role models. At the individual level, some teachers and their instructional materials failed to recognize the achievements of minorities in history, literature, science and other fields. The subtlest form of racism, however, often took the form of lower teacher expectations for poor and minority students. By demanding less of such students, teachers got exactly what they expected.

radio The wireless transmission of sound, or “wireless telephone,” as it was first called, following its invention in Europe in the late 19th century. Radio did not become an educative medium in the United States until the early 1920s, when the industry expanded from two local transmitters that reached a few thousand listeners in Pittsburgh and Detroit, to 530 stations broadcasting to more than 1 million American homes in 1924. Among the station owners were newspapers, which broadcast news; churches, which broadcast their varied

interpretations of “the word”; and universities, which offered home study courses and certificates from what was loosely called the “university of the air.”

By 1940, there were 847 American stations broadcasting to more than 28 million households—80% of all the households in the United States at that time. Radio became the most effective public medium of the day, reaching the unlettered as well as the educated with the informative, regular “fireside chats” of President Franklin D. Roosevelt; up-to-the-minute news of local, regional, national and international interest and news analysis by various experts; weekly concerts of the New York Philharmonic and the NBC Symphony; live opera from the Metropolitan Opera House; the weekly “Invitation to Learning,” which brought readings of classical literature to more than a million listeners; and, of course, a wide variety of entertainment, including comedy, popular music, variety shows and quiz programs. A 1945 survey found that Americans thought more of radio than they did of their churches and schools, saying that radio provided them with substantial general knowledge, practical information and cultural opportunities. Moreover, they said they preferred programs with advertising to those without, arguing that commercials provided them with useful information and shopping guidance.

Rainbow Curriculum A controversial series of short texts introduced in New York City schools in the early 1990s to inculcate in children a spirit of acceptance of a wide range of people of different races, religions, ethnic backgrounds and sexual preferences. It was the last element—illustrated by titles such as *Heather Has Two Mommies*—that triggered a barrage of attacks and parent demonstrations against the New York Board of Education and its chancellor, Joseph A. Fernandez. The texts were withdrawn as a mandatory part of the elementary

school curriculum. The booklets explaining “alternative lifestyles” remain available to the city’s schoolchildren as a counseling tool.

rational counting The counting of specific, concrete objects, as opposed to the simple mastery of the sequence of numbers. Also called enumeration, rational counting is the standard method of teaching students to count. Rational counting replaced rote memorization, which was the conventional method of learning numbers in the 19th century, before the development of the progressive education concept of moving from the concrete to the abstract. Rational counting gives each number name a meaning—as in “one book” or “two pencils”—instead of simply one, two, three and four. Teachers of young children routinely use rational counting as a pedagogical tool, asking one child to count the number of students, another to count books and others to count blocks. Teachers report that physical touching of the objects counted quickens number mastery.

raw score The actual number of correct answers on a test, unadjusted and unconverted to conventional grading systems or to relative positions in a distribution curve. Thus, the raw, or, as it is sometimes called, crude, score for six questions answered correctly on a test made up of 12 questions is six. As a percentage grade, it would be 50%. Graded by position on a distribution curve, it might, if it were the highest grade in the class, merit an adjusted grade of 90%.

“reach” school A colloquialism referring to a college whose empirical qualifications for admission appear somewhat higher than the academic qualifications of an applicant, thus making it an academic “reach” for that student. College-bound students usually apply to at least one such “reach,” “dream” or “stretch” school, as it is variously called, that they would most like to attend, but for which their aca-

demical qualifications are below those of the average student accepted to that institution. In addition to one “reach” school, college-bound high school students usually apply to at least one “safety” school for which they appear somewhat over-qualified academically, in comparison to the majority of applicants.

readability The degree of reader understanding of written material. Readability is an essential measure for publishers of educational materials to determine, prior to publication and distribution to specific student age groups. Materials too easy or too difficult to understand are of little educational value in the classroom, and teachers as well as publishers attempt to determine readability before distributing written materials to students. Vocabulary, syllabic structures, sentence structure, average sentence length, number of prepositional and participial phrases, page design and format, average paragraph length and type size and design are all elements taken into account in measuring readability. There are, however, a variety of different formulas and systems for measuring readability, none of which are accepted as entirely valid or reliable.

readiness skills (for school) A body of knowledge and abilities that provide a pre-school or kindergarten child with a foundation for the formal school experience and academic learning. A child who cannot read the individual letters of the alphabet, for example, lacks the readiness skills for learning to read. School readiness heads the list of educational priorities of the U.S. government’s GOALS 2000 program to make American education the world’s best.

The basic readiness skills required for learning in the school situation can be categorized as social, oral, interpretive and mathematical:

- Social readiness skills: ability to listen to others, take turns talking and not interrupt or distract others.

- Oral skills: ability to identify rhyming words (e.g., cat, bat), position words (front, back, beginning, end, etc.), upper case and lower case letters, and the sounds and names of letters.
- Interpretive skills: ability to understand the overall form of a story—i.e., beginning, middle, end—and analyze the traits of characters and predict what may happen to them after the story ends; ability to recount a story from a picture; ability to differentiate between real and make-believe.
- Mathematical skills: ability to sort and compare objects by color, kind, size, shape, details; ability to count from one to 10, backwards and forwards and starting from any number within the sequence; ability to estimate quantities and determine which of two groups is probably larger.

According to a study by the CARNEGIE FOUNDATION FOR THE ADVANCEMENT OF TEACHING, lack of school readiness skills developed from a wide variety of causes, including poor health care, inattentive or overworked parents, scarce child care and preschool opportunities, unsafe neighborhoods, malnourishment, mindless television programming and isolation from caring adults.

(See also NURSERY SCHOOL; READINESS TESTS; TESTING PRESCHOOLERS.)

readiness tests Examinations administered to preschoolers and kindergartners to measure their readiness for the formal elementary school educational process. Readiness tests are usually required for applicants to highly selective, private elementary schools, with far more applicants than available seats. Administered somewhat less routinely by public schools, readiness tests are far from reliable and are often invalid, because of built-in cultural biases that can obscure the educational promise of perfectly healthy or even gifted children. A rural child from a home with a huge, covered porch might fail to select the tricycle from a

picture question that asks, “Which of these toys do you never use in the house?”

(See also NURSERY SCHOOL; READINESS SKILLS; TESTING PRESCHOOLERS.)

reading The perception, comprehension and intellectual integration of printed letters or symbols, words and groups of words. The most basic element of formal education and the school curriculum, reading is generally defined as a four-part sequence: word perception, or recognition of a word and the understanding of its meaning; comprehension, or grasp of ideas from word groupings; reaction, or intellectual, emotional or physical effect or response; and integration, or absorption of all or parts of the material into one’s own body of knowledge and experience.

In broadest terms, reading instruction consists of three stages: development of a sense (sight or, in the case of Braille, touch); development of word-attack skills (learning to soundout, learning meanings by their context, etc.); and integration of reading and thinking. Ironically, learning to read does not begin with instruction in letters, but in the absorption of ideas and concepts during the preliterate years of infancy and early childhood. To begin to learn to read, infants and young children must first hear language, associate meanings to words and gradually intuit that words are composed of sounds, represented by printed symbols, or letters. “Play” with words and sounds is an essential element in acquiring reading readiness skills, by focusing the child’s attention on word sounds as well as meaning. A second important element is parental reading to children, to help them learn new words and meanings, expand vocabulary, provide contact with letters and words and build awareness that printed words tell stories and provide information. Some reading instruction also begins before preschool, as the child observes and, with parental assistance, recognizes large-

print logos—e.g., “PIZZA”—and engages in pretend-reading from books whose stories he or she already knows from parental readings. Depending on the individual child’s stage of development, formal instruction in reading-readiness skills may begin in preschool, but certainly no later than kindergarten, when children are taught to read, recite and write the alphabet and match capital and small letters.

Kindergarten reading instruction begins with elementary phonics, with children taught to make letter-sound associations, sound out and name letters at the beginning of short, monosyllabic words, and to read and rhyme short words such as *man* and *ran*. Teacher-directed storytime takes up a significant part of the kindergarten day. Children have read-along copies of many stories and poems and are encouraged to read aloud, according to their abilities. Cross-disciplinary stories introduce children to subjects such as history and science. Children also learn to differentiate between real and make-believe and to dictate their own words and stories to the teacher, who slowly transcribes them on the chalkboard. Teacher transcriptions of children’s words into written words are a basic teaching technique for kindergarten-aged children and are critical to their learning to read. Some children learn to write short words—spelled phonetically, correctly or incorrectly (immaterial at this age)—and all learn to write their own first and last names correctly.

As simplistic as such reading-readiness skills may appear, they are essential to the development of basic reading skills, which, in turn, are essential to academic success throughout primary, secondary and higher education and to economic and professional success in adult life. Better-than-average readers are generally higher-than-average achievers; those in power have traditionally sought to preserve their authority by limiting the literacy of the populace.

In the Western world, the development of reading as a popular skill got under way only after 1382, when a group of dissident Oxford University students, followers of John Wycliffe, first translated the Vulgate, or Latin Bible, into the vernacular. Until then, only priests and a minority of the nobility, fluent in Latin, had direct access to the contents of the Bible, which they could interpret as best served their interests. Wycliffe broke with the papacy over his belief in a direct relationship between humanity and God, without the mediation of popes, prelates and the church. Denouncing many of the beliefs and practices of the Catholic Church as nonscriptural, he called the Scriptures the sole religious truth; a translation of the Bible brought that truth to an expanded audience, who were encouraged not only to follow the text but also to interpret it. The development of the printing press during the 15th century and the Renaissance contributed further to the climate of literacy.

Wycliffe’s efforts helped bring about the Protestant Reformation that split the Catholic Church in 1517 and also sowed the seeds of a popular education movement, which had begun in England as a struggle between Wycliffe’s followers and those loyal to the papacy. The struggle grew more violent following Henry VIII’s break with the pope in 1532. In an attempt to resolve the conflict, Henry forced Parliament to pass the Act of Supremacy declaring him the head of the English Church. Recognizing the continuing strength of Catholics in England, his daughter, Elizabeth I, forced Parliament in 1562 to add “all teachers of children” to those required to take the oath of supremacy.

The object, of course, was not to spread education in the modern sense, but to produce a generation of Englishmen loyal to the Crown and its version of Protestantism, the Church of England. The result, however, was an unprecedented expansion of schooling throughout the

end of the 16th and beginning of the 17th centuries. Instead of cementing popular loyalty to Crown and church, however, reading opened the door to knowledge, and knowledge produced an endless array of intellectual and religious rebellions that, in turn, produced a civil war in Britain and sent many Britons fleeing to the American colonies.

The majority of schools produced by the Tudor educational revolution were *PETTY SCHOOLS*, which concentrated on learning to read Scripture. The study of reading began with the alphabet and syllables, taken from a *HORNBOOK*, or *ABC*. Introduced in the 16th century, the *ALPHABET METHOD* asked the beginning reader first to memorize the alphabet and, second, to memorize all the sounds for each letter (for example, *ba, be, bi, bo, bu* by for the letter *b*). The third step of the method required the teacher to present students with word lists of successively increasing difficulty, progressing from monosyllabic words of two, three, four and more letters to words of two, three and more syllables. Each word list ended with one or more short reading lessons incorporating words from that list for students to practice using the words they learned by pronouncing each letter and word as they read aloud in unison. As students grew more proficient, the teacher/minister proceeded sequentially to a *PRIMER*, a catechism, a Psalter, the Old Testament and the New Testament. For wealthier students, education progressed from petty school to grammar school, where they studied Latin, mathematics and other advanced subjects. It was this type of education that the first English settlers brought to the American colonies.

After independence, some leaders of the new nation, such as *THOMAS JEFFERSON*, *JAMES MADISON*, *BENJAMIN FRANKLIN* and *NOAH WEBSTER*, recognized that the ability to read was essential for democratic self-government. Northern industrialists and southern plantation owners feared that education might pro-

voke worker rebellions and deprive them of their cheapest labor—children and black slaves. Again, reading was seen as a danger to the powers of the ruling class, and southern states passed laws making it a crime, punishable by fines and imprisonment, to teach blacks how to read. The creation of state public school systems following the Civil War legally opened education and reading to all American children, but pervasive child labor prevented almost half the children in the United States from attending school. It was not until the passage of the last of the state compulsory education laws in the early 1920s that every American child was given the right to learn how to read.

In today's schools, children equipped with reading-readiness skills begin in first grade to learn to recognize whole words, read complete sentences, paragraphs and short stories and, above all, to understand the meaning of the texts they read. Although some schools preface whole-word instruction by *PHONICS*—i.e., the “sounding” out of individual letters, letter combinations, then words—most teachers combine phonics and whole-word instruction, followed by the *BASAL READER* program, a group of instructional materials consisting of readers and workbooks.

In the later elementary school and middle school years, reading instruction gradually shifts from development of basic recognition skills to vocabulary expansion and the development of a variety of subskills, including understanding word meanings from their context, finding the main idea in a sentence, paragraph or passage, distinguishing between fact and opinion and summarizing and interpreting complex written materials. By the end of elementary school, learning to read has evolved into reading to learn, with the learning of new reading skills limited to subskills such as scanning, finding meanings through context, comprehending abstract materials and acquiring a larger, more technical vocabulary.

reading accelerator Any of a variety of mechanical devices developed in the 1960s to increase the reading speed of slow readers and students with reading disabilities. One device uses a flat bar, about an inch and a half wide, that lies across the page and moves down it at a speed that can be adjusted mechanically, forcing the reader to stay ahead of the bar. Another device covering the entire page is equipped with a moving shutter mechanism that moves downward, exposing one line at a time. By shortening the time of exposure, the teacher can force the student to read faster. Comprehension is tested after each page is read. Somewhat effective with “lazy” but otherwise normal readers, the device can prove extremely anxiety provoking.

reading age The age-equivalent level of a student’s reading ability as measured by standardized, norm-based examinations. Reading age does not take chronological age into account. Thus, a student with a reading age of 10 may actually be six, 10 or 20 years of age.

(See also **READING LEVELS**.)

reading clues A variety of elements in a written passage that indirectly suggest the meaning of a word, of a character’s personality or feelings or of story content and plot. Teaching students how to identify reading clues—probable story content from a title or the meaning of a word from its context—is an essential element of reading instruction in elementary school education.

reading comprehension The ability to infer meaning from a printed passage. There are four levels of reading comprehension that develop sequentially: literal, interpretive, critical and creative. The first limits understanding of written materials to words, phrases, sentences and explicitly stated ideas. Interpretive comprehension allows the reader to under-

stand ideas implied, but not specifically stated, in a printed passage. Critical comprehension allows the reader to evaluate the accuracy and aesthetic value of a passage, while creative comprehension allows the reader to relate and apply ideas expressed or implied in a passage to the world beyond that described in the reading. An essential part of the reading instruction program is to teach students to progress from one level of comprehension to the next, although the rate of progress is determined in part by individual development and sociocultural and economic background.

Reading First A \$1 billion-a-year federal initiative under the \$10 billion NO CHILD LEFT BEHIND ACT OF 2001 to raise reading proficiency of students in the K-3 elementary years, with particular focus on disadvantaged children. Studies show that students who emerge from 3rd grade with reading deficiencies tend to fall behind their peers academically at accelerating rates and eventually join those most likely to drop out of high school. About 40% of American fourth graders are unable to pass tests for reading fluency in English—defined as “an effortless, smooth and coherent oral production of a given passage . . . in terms of phrasing, adherence to the author’s syntax, and expressiveness.” The Reading First program is designed to introduce skills-based reading instruction in all schools, but especially in struggling and failing public schools, and to retrain K-3 teachers and reading coaches across the nation to use research-based teaching methods designed especially for disadvantaged children. To continue receiving grants, Reading First programs must produce progress in student reading proficiency within two years.

After the first five years and grants of more than \$4.6 billion, however, Reading First programs produced a mixed picture of benefits, as many individual children showed dramatic improvements from one-to-one coaching in

kindergarten and first grade, but then leveled off or fell behind when more sophisticated skills in group settings were required. Moreover, more than one-quarter of the nation's public schools—26,000 out of 91,400—failed to make “adequate yearly progress” in reading proficiency after the first two years of the program. At least some of the failures of the Reading First program may have resulted from violations of conflict-of-interest rules by Department of Education officials who administered the program. According to a report by the department's own inspector general in 2006, the then-director of the program instructed subordinates to ignore competitive award practices and steer contracts for learning materials to specific publishers. In addition, under the administration of George W. Bush, the department deliberately made it more difficult for states with opposition party administrations to obtain Reading First grants. Again, according to the Department of Education inspector general's report, some states had to apply for grants as many as six times before receiving what should have been automatic approval.

reading games Any of a variety of entertaining activities that require students to read. Some reading games, such as crossword puzzles, picture riddles, rebuses and card games, are commercially prepared; others are prepared by teachers. By associating reading with “fun,” reading games are designed as conditioning experiences that, presumably, help students develop a lasting interest in reading. There are no valid or reliable studies to support that assumption, however, and experienced teachers are careful to keep games to a minimum and to select only those that focus on the acquisition of specific skills. One disadvantage of reading games is their failure to teach children that learning often requires serious, albeit rewarding, concentration. Overuse of games

can dissuade some children from learning efforts that fail to entertain and provoke a “that's-no-fun” response.

reading levels A broad-based measure of individual reading achievement, valid only when related to the reader's age and the level of difficulty (or readability) of the material. There are three basic evaluative levels, as determined by an INFORMAL READING INVENTORY:

- Dependent level. Reader needs no assistance, makes fewer than 2% oral reading errors and comprehends more than 90% of the material.
- Instructional level. Oral reading errors reach 5%, while comprehension, or comprehension “capacity,” drops to about 75%, and reader needs some teacher assistance.
- Frustration level. Oral reading errors climb to more than 10%, while comprehension falls to less than 50%; a level detrimental to instructional progress and one at which materials are withdrawn in favor of easier reading.

Teacher evaluation of a student's reading level and comprehension capacity is essential in the selection of appropriate materials for basal reading instruction of early elementary school students.



Elementary school students complete a reading assignment to learn comprehension skills.

reading lists In education, any roster of books and other reading materials deemed appropriate in terms of content, language and readability for a youngster at a specific age or grade in elementary or secondary school. Publishers of children's and young adult (adolescent) books generally specify the age groups for which each book is most appropriate. There are myriad reading lists prepared by libraries, teachers' associations, religious organizations and publishers. Some lists are inclusive, in that they include all literature generally regarded by scholars as classical along with newly published works deemed appropriate by teachers of reading and English; others are exclusive, in that they exclude materials—classical or not—deemed objectionable to a particular community or group within that community. Although there are no universally accepted reading lists, in 1988 then-secretary of education William J. Bennett developed reading lists of appropriate literature for every grade from kindergarten through high school. The New York Public Library and various teachers' associations also produce annual reading lists largely related to new books published in that year.

reading rate The speed at which one reads orally and silently, expressed in words per minute. Normal oral and silent reading rates for a 10-year-old child at the beginning of fourth grade are about 130 words per minute. Although oral reading rates remain relatively stable at that level, silent reading rates climb to about 250 words a minute by the time students graduate from high school. Silent reading rates are affected by reader interest, reader familiarity with the context of the material, reading environment (lighting, noise levels, etc.) and the reader's physical and psychological condition.

reading readiness That level of physical, intellectual, emotional and sociocultural development at which a child is most susceptible to

successful acquisition of reading skills. Most normal children do not know how to read when they enter kindergarten at five years old, but they are ready to learn to read. Reading readiness is evident by a number of distinct, measurable characteristics: sight recognition of familiar words, such as one's own name, product names and road signs; ability to recite all or most of the alphabet and to point out and name letters and numbers; the knowledge of how books "work": from left to right and top to bottom on each page and from front to back, that the printed symbols on each page represent spoken sounds and words, and the knowledge of story form—with a beginning, middle and end.

Most schools generally try to measure reading readiness with tests that measure alphabet and letter recognition, whole-word recognition, vocabulary and visual discrimination (the ability to distinguish between p and b, for example). Although the tests correctly predict that children with high scores do indeed progress quickly in reading instruction and achieve superior reading proficiency by third grade, they have relatively little validity in predicting the future progress of children with low scores. Indeed, they may simply evaluate the child's level of development at the time of the test rather than any real reading "aptitude." Experienced first grade teachers maintain they can determine a child's reading aptitude far more accurately than tests, through observation of a child's drawings, body language, listening skills, reaction to stories, participation in classroom discussions and interaction with peers, adults and classroom materials.

Reading readiness is largely a function of a child's socioeconomic and cultural background during the preliterate years. Children acquire such skills both by direct instruction and by simply observing their surroundings and absorbing knowledge independently. Acquisition of the first reading-readiness skills begins

when the infant first hears language spoken. Gradually, the child begins to associate meanings to words and eventually to intuit that words are composed of sounds, represented by printed symbols, or letters. “Play” with words and sounds are an essential element in acquiring reading-readiness skills, by focusing the child’s attention on word sounds as well as meaning. A second important element is parental reading, which teaches new words and meanings, provides contact with letters and words and builds awareness that printed words tell stories and provide information.

Some reading instruction begins before preschool, as the child observes and, with parental assistance initially, but eventually independently, recognizes large-print logos—e.g., “PIZZA”—and engages in pretend-reading from books whose stories he or she already knows from parental readings. The process continues in day care, nursery school and preschool, with acquisition of alphabet and limited word recognition skills and other reading “building blocks.”

(See also PRESCHOOL; READING.)

reading reversals A perceptual dysfunction whereby the reader sees similarly shaped letters and words in reverse—*b*, for example, instead of *d* or *p*, and *saw* instead of *was*. Relatively common among preschool children and beginning readers, reading reversals, if they persist, can be one symptom of more serious visual perception problems or learning disorders in reading letters, words or sentences. For normal reading-reversal problems, many teachers introduce multisensory instruction, whereby children trace each letter with their fingers, while reading and reciting the letter aloud.

(See also LEARNING DISABILITIES; DYSLEXIA; ORTON-GILLINGHAM METHOD.)

reasoning skills The ability to infer or reach conclusions in an orderly, rational way on the basis of a group of facts and applicable princi-

ples or laws. Often called higher-order thinking skills, reasoning skills are generally defined as the ability to identify a problem, to determine what information is needed to solve it, to generate possible solutions from such information, to evaluate each solution and select the correct one, to implement the solution and to describe and defend the reasons behind the implementation. In short, reasoning skills require students to arrive at the correct solution and explain how and why they arrived at it.

Reasoning skills have been at the center of a highly charged educational debate over the apparent failure of American public schools to teach such skills to most students. Much of the failure is ascribed to the pervasive use of objective tests requiring only rote answers and memory skills, instead of written essay-style tests and assignments requiring original thought.

Generally required for academic proficiency, beginning in the fifth grade, reasoning skills are essential to academic success at the high school and college level. Although many students acquire problem-solving skills and strategies intuitively or by imitating others, some educators believe that instruction in reasoning skills should be an integral part of the curriculum throughout the elementary and middle school years. Instruction in reasoning skills begins with extensive use of teacher questioning and problem-raising, followed, initially, by teacher guidance in and discussion about identifying, evaluating and selecting problem-solving strategies. In solving problems for the class, teachers intent on teaching reasoning skills carefully describe the reasoning skills and problem-solving strategies they used in arriving at a solution, rather than simply providing the solution.

rebus A COMMON READING GAME that combines pictures and other symbols with printed letters and words in a sequence that permits a young reader to decode a complete sentence by sequentially pronouncing the name of each picture, let-

ter or word. Thus, the number 2 might be used as a symbol for the words to or too, as well as two, while a picture of a bee might be used to symbolize the word be. The word *rebus* is derived from the Latin word *res*, or thing.

recital In education, the public demonstration of a student's skills in the performing arts, either alone or in concert with one or more other students. Recitals are often required in performing arts courses in lieu of the traditional final examination of academic courses. They are generally

required, as well, as auditions for admission to specialized schools for the performing arts. Recitals may also be an extracurricular activity, in which students perform for the entertainment of fellow students, parents, faculty and friends. In all cases, they are essential instructionally for future public performers, who require preparation and emotions far different from that of instrumentalists who perform alone.

Reconstruction The decade (approximately) following the Civil War, during which



Reconstruction saw schools overflowing with African Americans of all ages hungry for education after more than two centuries of slavery, during which the teaching of reading and writing to blacks was a crime in the South. (*Library of Congress*)

normal relations were restored between the Union and the secessionist Southern states. For education, Reconstruction meant the introduction of formal schooling of African Americans for the first time in their history. Moreover, Reconstruction also saw the first extension of the northern common, or public, school system to the South, thus introducing poor white children to their first formal schooling.

Reconstruction consisted of three phases: The first was a two-year period of relative self-rule, during which the Southern states passed laws that all but restored slavery, in the guise of runaway-apprentice and contract-labor laws reminiscent of pre-Civil War fugitive slave laws. The second phase began with congressional passage of the First Reconstruction Act of 1867, dividing the South into five military districts, each under the control of a Union general charged with ensuring that each state draw up and ratify a constitution guaranteeing all citizens the right to vote, regardless of race, and mandating schools for all children, thus guaranteeing everyone the right to a public education. The third phase began in 1868, with the readmission of the secessionist states to the Union, the restoration of self-rule, and ratification of the Fourteenth Amendment to the U.S. Constitution that declared everyone born in the United States a citizen thereof and thus guaranteed the privileges and protection of the federal Constitution. It extended to each state government all the constitutional restrictions that applied to the federal government. Reconstruction proper may be said to have ended in March 1870, with passage of the Fifteenth Amendment to the Constitution giving all citizens the right to vote and stripping states of the power to deny such rights on the basis of race, color or previous condition of servitude.

Within the framework of Reconstruction, public education generally and African-American education specifically spread southward by four methods: by church missionaries from the

North, who opened schools for former African-American slaves; by fiat of the military governors, such as Gen. SAMUEL CHAPMAN ARMSTRONG, who opened schools for former slaves on military bases; by order of Congress, which established the FREEDMAN'S BUREAU, charged inter alia with establishing free public schools and institutions of higher education for African Americans in the South; and by southern state governments themselves.

The end of Reconstruction and a return to self-rule saw southern states gradually reimpose tight restrictions on African Americans. Using every device from discriminatory taxes to terrorism, the states gradually deprived blacks of both the right to vote and the right to a minimal education. By 1874, white supremacy had been reestablished throughout the South, and schools were segregated along racial lines. Eager to restrict popular power, the states slashed educational budgets, effectively limiting comprehensive education to wealthy families who could afford to send their children to private schools. Reconstruction may thus be said to have brought public education and common school systems to the South, but, by the end of the 19th century, those schools ranked as the poorest in the United States, with Louisiana at the bottom.

reconstructionism A philosophy of education based on social reform and the spread and preservation of democracy as essential elements of formal schooling. An outgrowth of JOHN DEWEY's philosophy, reconstructionism grew as a movement in the 1930s, as the Depression devastated the United States, and a group of Columbia University Teachers College scholars—all disciples of Dewey—declared a need to reconstruct American society and the American economic system, through a redistribution of wealth. They further called for reconstruction of the educational system. They began their program by urging teachers to indoctrinate

nate students in democratic principles, converting classrooms into laboratories of democratic behavior and social change. Among the reconstructionists were Teachers College professors HAROLD O. RUGG and GEORGE S. COUNTS. Counts was the first to articulate the reconstructionist program in a widely read pamphlet entitled "Dare the School Build a New Social Order?" Rugg translated the program into social studies texts that were widely distributed in public schools across the United States, until they were ordered burned by the American Legion and other patriotic groups.

Although reconstructionist ideas and pamphlets were the center of considerable discussion and debate among educators in graduate schools of education, they had little long-term, practical effect on elementary and secondary schoolteachers, desperately trying to teach basic academics while maintaining a semblance of order in overcrowded classrooms. While still of interest, reconstructionism has had little lasting effect on American education.

recreation In education, any structured or unstructured period of nonacademic activities organized for the relaxation and amusement of students. Generally used to describe the unstructured school playground or gymnasium activities of kindergarten and early elementary school children, recreation is absorbed by more structured PHYSICAL EDUCATION in the later elementary school years.

redshirting A colloquialism usually referring to the practice of some college football coaches of keeping younger players out of varsity competition for a year to extend their eligibility while allowing them to develop more fully physically and thus be less prone to injuries. The term refers to the red shirts worn by members of the practice squad in scrimmages against the regular varsity players. National Collegiate Athletic Association rules permit

students to play only four years of any given varsity sport. A redshirted freshman can thus postpone playing for the varsity until sophomore year and extend his varsity years into graduate school at age 23 or older. The practice has led to widespread abuses that reach back into high school sports, with some parents and football coaches encouraging talented 13- and 14-year-olds to repeat their last year of middle school and thus enter high school stronger and better developed physically. The practice was first reported in the 1980s, in Alabama and Texas, where football often takes precedence over academic achievement. At the college level, some coaches ask potential players to repeat their senior year of high school for the same reason.

Reeve, Tapping (1744–1823) American lawyer, jurist, educator and founder of the nation's first LAW SCHOOL. Born in Long Island, New York, he graduated from the COLLEGE OF NEW JERSEY (NOW PRINCETON UNIVERSITY) in 1763. Like most aspiring lawyers before the modern era, he studied law as an apprentice in a law firm, learning his trade through a combination of self-study, copying legal documents, informal association with and formal instruction from practicing lawyers and, eventually, limited practice under supervision.

In 1772, he opened a practice in the then-important town of Litchfield, Connecticut, where his skills quickly earned him a national reputation and drew more students than he could possibly train. To avoid repeating himself and to improve his teaching efficiency, he devised and opened what was the nation's first "law school" in 1774. The Litchfield Law School was a simple free-standing structure he built in his backyard. It was devoted entirely to instruction and study, and it quickly became the nation's preeminent institution of its kind. Reeve eventually worked out a curriculum consisting of a carefully planned series of lectures

on 139 different areas of the law. Among his most notable students was the young Horace Mann, who would later found the nation's first public school system in Massachusetts.

When Reeve was appointed to the Connecticut Superior Court in 1798, he called on a former student to help him run the school until 1820, when two more former students joined the faculty. It remained the nation's premier law school until its closure in 1833, when it could no longer compete with the expanded law departments at Harvard, Yale and Columbia Colleges. Reeve went on to become chief justice of the Connecticut Supreme Court of Errors. He retired from the bench and public life in 1816. He devoted the rest of his life to writing definitive law texts, although he continued teaching until 1820.

reflective teaching A teacher-training program aimed at making public school teachers more insightful in their approaches to teaching and to problem solving. Started in the late 1960s, reflective teaching was designed to counter criticisms that public school teachers have few insights into why they teach given material and that they are mere automatons. Most teachers, it was said, merely fed students whatever materials were prescribed by state regents or district boards of education and referred all student problems to guidance counselors or administrators charged with problem solving.

There are a variety of complex approaches to reflective teaching. In broadest terms, these approaches call for careful description of a problem, with all its contributory elements, including self-evaluation and examination of the teacher's own contributions to the problem. In the academic sector, reflective teaching calls for a broad knowledge of the reasons for teaching a particular topic—the "why" of teaching as well as the "what." Reflective teaching practices are usually developed during in-ser-

vice training, in conjunction with a supervisory mentor or master teacher.

Reformation The 16th-century ecclesiastical revolution in the Roman Catholic Church that created Protestantism and began the movement in the Western world toward universal public education. Although the Reformation had vast historical consequences, its implications for the history and evolution of education can be traced to one event: the translation of the Bible into a vernacular that permitted public access to a document that had hitherto been the closely guarded purview of the priesthood. The church hierarchy had used the Scriptures to justify despotic papal civil rule across western Europe, papal taxation, lavish spending by clerics at all levels for their personal pleasures, the sale of indulgences to laic transgressors and all the excesses and oppression that are ubiquitous elements of autocracies.

Resentment against papal taxation and rule by a distant, foreign papacy first made its appearance in England in the 14th century, when a dissident priest, John Wycliffe, saw the Bible translated into English and began preaching sermons in English rather than Latin. His teachings coincided with a peasants' revolt in England and were ultimately responsible for provoking nationalist uprisings in Bohemia in the 15th century and Germany in the 16th century. Moreover, Wycliffe's work influenced the young German priest Martin Luther, who finally rebelled against papal authority in 1517 and began the establishment of the first of the Protestant sects.

Swept up in the fervor of the Reformation was a young English priest, William Tyndale, who in 1524 retranslated the Bible into an English vernacular more accessible to the English masses than Wycliffe's translation. Banned in England and printed in Germany in 1525, copies began streaming into England. The fortuitous invention of the printing press in the

15th century produced new copies as quickly as church authorities could seize and burn them. By 1537, the bishop of Hereford, Edward Fox, warned a conference of bishops, "Make not yourselves the laughing-stock of the world; light is sprung up, and is scattering all the clouds. The low people know the Scriptures better than many of us."

By then, Henry VIII had split with the Roman Catholic Church and declared himself the head of the Church of England, thus creating another Protestant church. In 1538, just two years after Tyndale had been executed for heresy, Henry ordered English Bibles placed in every church in England. Henry's proclamation was reconfirmed and honored during the subsequent regency, by the Catholic Queen Mary, and then by Henry's daughter Elizabeth I.

Tyndale's Bible thus became a powerful instrument of popular education. It was written in a style that was particularly readable, and it therefore served as a basis for all subsequent English translations, including the Great Bible of 1539, published under the authority of Thomas Cranmer and Thomas Cromwell, and the King James Bible of 1611. Translated into the language of the laity, the Bible became an incentive to literacy and the basis for all instruction in the English world, allowing ordinary people as well as an appointed few to become students for the first time in history. Intellectually, it gave the people, as well as an appointed clerical elite, access to "The Word of God." By substituting individual textual examination, study and discussion for dogmatic doctrine, the translated Bibles provoked intellectual and religious freedoms that spawned an endless variety of Protestant sects. Ultimately, the translation of the Bible implied a trust in human reason from which the concept of universal public education was a natural outgrowth.

reformatory Acustodial institution designed to reeducate and rehabilitate individuals

deemed deviant or dependent and in need of spiritual, educational and physical care. Originally the purview of private, charitable organizations, reformatories gradually evolved into quasi-public and, finally, publicly operated institutions over the first half of the 19th century. It is only in the second half of that century that they became penal institutions. A group of New York City Protestant evangelical churches was responsible for founding the first reformatory. Called the Orphan Asylum, it was a shelter that provided instruction in reading, writing, arithmetic and domestic affairs, along with "a sound moral education in a homelike atmosphere, presided over by a pious and respectable man and his wife." Ten years later, the New York Society for the Prevention of Pauperism set out to determine the causes of poverty in order to eliminate it in New York City. After nearly a decade of investigation, it established the House of Refuge in 1825, as a residential facility to provide homeless boys with moral rehabilitation and training in mechanical skills. By 1840, it had become the official New York State agency in New York City for the rehabilitation of juvenile delinquents, giving a reformatory the connotation of a penal institution for the first time.

State and federal reformatories, or training schools, as they are often called, remain penal institutions for young offenders, usually ranging in age from 16 to 25 years, depending on state law. Unlike prisons, which are designed to punish, reformatories continue to be concerned with the physical, psychological and moral development and rehabilitation of inmates, and they continue to provide academic and vocational education. Inmates are usually given indeterminate sentences, with release determined by behavior and developmental progress.

Reformed churches Protestant Calvinist churches with their origins on the Continent

rather than in England and Scotland. Similar in many respects to Puritanism, Congregationalism, Presbyterianism and other reformed churches that originated in the British Isles, the Continental Reformed Churches bear the name of their countries of origin—Dutch Reformed, German Reformed, etc.

(See individual churches for their influence on American education.)

regents Members of a governing board with policy-setting powers and authority over the operations of public education. The term is variously used to mean members of the governing board for all state education, as in the New York State Board of Regents, or simply the board of trustees of a state university, as in the Board of Regents of the University of California. The term is a carefully chosen one, referring back to regents who ruled with the full authority of the king in his absence. Thus, regents in American education were originally appointed by and ruled with the full authority of the state executive or governor, although regents in some states are now elected. Their role and powers differ somewhat from those of trustees, who are entrusted with authority over private schools and are elected on the basis of their proven commitment to long-range institutional goals rather than to the goals of a single governor or constituency.

regents examinations Standardized competency examinations required of all public elementary and secondary school students by a state board of regents for promotion to the next higher grade or for graduation from the high school. In 1913, New York State's Board of Regents established the first such examinations in core subjects such as English, mathematics, social studies, science and foreign languages.

regional educational research laboratories In education, a nationwide network of

geographically dispersed centers funded by the U.S. Government under Title IV of the ELEMENTARY AND SECONDARY EDUCATION ACT OF 1965, to improve the quality of education in public elementary and secondary schools. Although 20 such laboratories were funded by the act, only nine remained after 20 years: Appalachia Educational Laboratory, Charleston, West Virginia; CEMREL, Inc., St. Louis, Missouri; Far West Laboratory for Educational Research and Development, San Francisco, California; Mid-Continent Regional Educational Laboratory, Aurora, Colorado; The Network, Inc., Andover, Massachusetts; Northwest Regional Educational Laboratory, Portland, Oregon; Research for Better Schools, Philadelphia, Pennsylvania; Southwest Educational Development Laboratory, Austin, Texas; SWRL Educational Research and Development, Los Angeles, California. Notable for massive amounts of monographs and educational design proposals, the laboratories produced few practical reforms or improvements in education in their regions. The regional laboratories had no direct, administrative ties to the 14 RESEARCH AND DEVELOPMENT CENTERS of the Office of Educational Research and Improvement at the U.S. Department of Education, although the latter did provide some funding for some regional-laboratory research projects.

registrar A college or university official charged with officially registering and keeping the rolls—including course-enrollment records and grades—of all students attending the institution.

registration In higher education, a term with two meanings, namely, the annual process of entering one's name on the official record of students attending an educational institution and the process of enrolling in specific classes or courses. Institutions of higher education have varied registration requirements, with some requiring only annual regis-

tration and others requiring it at the beginning of each semester. In primary and secondary schools, registration is usually required only once at any single school, when the child first enrolls. The single registration is valid until the child either graduates to a higher level school or moves to a new community and enters a new school.

regression In education, a temporary reversion to an earlier level of behavior by an otherwise normal child experiencing normal developmental progress. Not to be confused with the more serious, psychological term, regression is a normal aspect of child and adolescent development. Two kinds of regression are most common in the classroom: intellectual and behavioral. The former manifests itself in memory lapses: A student temporarily forgets or is suddenly unable to perform or demonstrate routine material he or she had apparently mastered. Usually, such regression disappears after adequate repetition and achievement of true mastery. Behavioral regression manifests itself in conduct that is inappropriate for the particular student's age and is usually the consequence of a particular event. Teachers can often help students overcome such problems by quiet, one-to-one discussions designed to elicit the cause of the regression. The more serious, psychological regression usually involves long-term, infantile behavioral problems requiring professional psychological or psychiatric help.

regular education initiative An approach to mainstreaming that integrates special education and other resources, teachers and specialists into regular classrooms to provide special help to regular students as well as to special education students with chronic extra needs. The goal of the regular education initiative is to avoid labeling students with special needs and isolating them from their classmates in special-

resource classrooms. By working as a team, special education and regular teachers integrate all daily instruction—special and regular—into a single, unified educational program. While filling the needs of special education students, such teams also provide the occasional, extra in-classroom help that almost all regular students also need from time to time.

Rehabilitation Act of 1973 A landmark federal law that prohibited discrimination on the basis of physical handicaps by any public or private organization receiving federal funds, directly or indirectly, and mandated the elimination of architectural barriers that interfered with access by the handicapped to a publicly used building. The law opened all schoolhouse and college doors to the physically handicapped for the first time in American history. The law specifically barred discrimination in hiring on the basis of physical handicaps, and it barred handicap-based discrimination in admissions by all schools and social-service organizations. The law also required federal contractors, including educational institutions fulfilling federal contracts, to "take affirmative action to employ and advance handicapped individuals." The act was amended in 1984 and again in 1986 to require expanded services, including rehabilitative vocational education, for the severely handicapped. As a result of the various acts, the number of physically handicapped children attending American public elementary and secondary schools climbed from a negligible amount when the first act was passed in 1973 to nearly 3 million students, or more than 7% of the school-aged population, 20 years later.

reinforcement A psychological term referring to rewards (positive reinforcement) or punishments (negative reinforcement) that encourage or discourage repetition of a particular type of behavior. In the classroom, teachers

routinely use praise, high grades and extra privileges and responsibilities to reinforce positive social and academic behavior.

released time A specific period, usually toward the end of the school day, during which a student, at the request of his or her parents, is permitted to leave school to attend religious instruction at a nonschool site. Released time does not relieve the student of responsibility for learning the work covered in the regular classroom and for all homework assignments. Released time affects only individual students, and nonparticipating students must remain in school until regular dismissal.

Released time represents a compromise between two groups with diametrically opposed but nonetheless sincere interpretations of the FIRST AMENDMENT TO THE U.S. CONSTITUTION. On the one side are those for whom any religious practice in school represents a violation of the First Amendment's ESTABLISHMENT CLAUSE mandating separation of church and state. Opposed to them are those who see any ban on religious practice as a violation of First Amendment guarantees of freedom to practice religion. In 1948, the U.S. Supreme Court ruled in *MCCOLLUM V. BOARD OF EDUCATION* that clerics could not come into public schools to offer religious instruction, but in 1952 it ruled in *ZORACH V. CLAUSON* that students had a constitutional right under the First Amendment's guarantee of freedom of worship to obtain religious instruction off school premises. The state, in other words, could not forbid a student from leaving school to practice his or her religion. Moreover, released time did not violate the principal of church-state separation so long as the school was neutral and nonparticipatory, spent no funds to facilitate such religious instruction and held all students responsible for the schoolwork they missed.

religion In American education, an institutionalized set of beliefs based on a power or

being superior to humans and ultimately responsible for the creation and governing of humanity and the universe. Religions—for the most part Protestant Christian religions—were the basis of all education in the American colonies. With independence, Americans and their educators ignored the ESTABLISHMENT CLAUSE of the First Amendment that was aimed at separating church and state. Indeed, six states (New Hampshire, Massachusetts, Connecticut, Maryland, Virginia and South Carolina) had official religions and mandated or permitted taxes for the support of public teachers of the Christian religion. It was not until 1833 that the last of these six states, Massachusetts, disestablished its official religion. Disestablishment did not end the continuing conflict between constitutionalist defenders of the First Amendment and those who seek to introduce religion into public education and American life generally. Although state after state has sought to introduce daily prayers into their elementary and secondary public school curricula, the U.S. Supreme Court has consistently ruled such efforts a violation of the Establishment Clause.

(For a fuller discussion, see *ABINGTON SCHOOL DISTRICT V. SCHEMPP*; CHILD BENEFIT THEORY; CHURCH-STATE CONFLICTS; RELEASED TIME.)

Religious Education Association An association of religious educators founded in 1903 to promote broad programs of Christian education in the home, the church, the Sunday school and the public school. Guided in its early years by George Albert Coe, it failed in its attempts to introduce prayer and religious instruction in the public school curriculum, but did spearhead the widespread practice of church-sponsored RELEASED TIME, whereby public schools permit students to leave school early to obtain off-premises religious instruction.

religious schools A wide variety of part-time and full-time elementary and secondary

schools sponsored by or affiliated directly or indirectly with individual churches and religious groups. Part-time religious schools, such as Sunday schools, usually offer instruction devoted entirely to religion. Although instruction at some full-time religious schools is intensively religious, the majority of such schools offer general academic as well as religious instruction. There are nearly 21,500 full-time religious elementary and secondary schools in the United States—about 18% of all primary and secondary schools—and they hold more than 4.35 million students, or more than 8.2% of the student population. Religious schools make up nearly 80% of all private schools and enroll more than 85% of the private school student population. Roman Catholic schools make up the largest percentage of religious schools—nearly 30%. Of the more than 4,000 “bricks-and-mortar” (that is, free-standing, non-Internet) institutions of higher education in the United States, 880, or 21.6%, are religiously affiliated, and their 1.6 million students make up almost 9.5% of the more than 17 million college students in the nation.

Religious schools do not necessarily limit their enrollments to students of the faith with which the school is affiliated. Indeed, many are open to students of all faiths, although they include clergy on their faculties and some, at the elementary and secondary levels, require all students to attend services and classes in religious instruction.

(See also PAROCHIAL SCHOOL.)

remedial reading A program of special instruction to correct deficiencies in a student’s previous reading development. Not designed for students with learning disabilities or other incapacities, remedial reading is simply corrective instruction for normal students whose previous reading development was in some way stunted or impaired by external factors such as cultural deprivation or a late start in school.

Remedial reading programs merely provide one-to-one “catch-up” instruction by a remedial specialist. As in normal reading programs, remedial reading instruction teaches visual and sound discrimination, letter recognition, sound recognition, sound blending, recognition of word meanings and WORD-ATTACK SKILLS.

remediation program A broad-based instructional program to correct multiple deficiencies in a student’s educational development. Such remediation may include remedial reading, remedial mathematics and special assistance in a variety of other subjects such as science or foreign languages. Designed to focus on the student’s entire academic development, remediation programs range from “extra help” during a free period or after school to complex prescriptive programs that may involve modifying course content, introduction of unorthodox instructional methods, instruction in learning skills, possible changes in the student’s home or school learning environment and even behavior modification.

Renaissance Literally a rebirth, referring roughly to the period in European history, from 1300 to 1600, that saw the flowering of Europe’s first universities and colleges and explosive advances and changes in art, science, technology, philosophy and political systems. Considered by many scholars a turning point in Western civilization, the Renaissance was a period of intellectual ferment that encouraged the emergence of humanists who tested medieval conceptions of the universe that had, with the support of the Catholic Church, dominated all Western thought. The humanists reexamined the role of humans in the universe and concluded that humans shared control over nature with God. The humanists rediscovered and celebrated such pre-Christian human achievements as the art and architecture and the literary, historical, philosophical and scientific

works of ancient Greece and Rome. One result of this expansion of intellectual frontiers was a broadening of education. Secular education—including classical literature, the sciences and mathematics—began to infiltrate the hitherto all-religious curricula of schools and colleges. By the 17th century, when the first schools and colleges opened in the American colonies, primary and secondary education was extended to non-theological students. By the beginning of the next century, even theological colleges such as Harvard and Yale had expanded their curricula and were welcoming students of the sciences and the humanities, as well as future clerics.

(See also REFORMATION.)

Rensselaer Institute The first private college in the United States devoted exclusively to instruction of engineering and the sciences. Founded in 1824 in Troy, New York, Rensselaer was actually the second American college to teach engineering; the first, West Point, was not only a government institution but also limited its instruction to building fortifications and other military installations. A growing need for engineers to work on civil projects led to the opening of Rensselaer (now Polytechnic) Institute in Rensselaer County, which had been part of the tract of land owned by Killian van Rensselaer, the Dutch gem merchant who was a founder and director of the Dutch West India Company, which colonized the area. In addition to engineering, the Rensselaer Institute's original curriculum included chemistry, botany, zoology and the teaching of agricultural techniques and the use of fertilizer in the cultivation of vegetables. Along with West Point, Rensselaer pioneered the development of advanced mathematics, chemistry, physics and laboratory instruction in the natural sciences. When liberal arts colleges later added sciences and engineering to their curricula, they used the instructional models developed at West Point and Rensselaer.

An all-male institution when founded, RPI is now coeducational, with women constituting about 26% of the nearly 8,300 students in its five undergraduate and five graduate schools. In addition to undergraduate and graduate science and engineering, which continue to be the centerpieces of its curriculum, RPI now offers undergraduate and graduate programs in architecture, business, computer science, all sciences, the humanities and social sciences.

report card A record of a student's grades for the marking period, term or school year. Report card (or grade card) formats vary from school to school and according to the level of education. In preschool and the early elementary school years, "grades" are usually in the form of general assessments, such as "unsatisfactory" (or "needs improvement," in the gentler schools), "satisfactory" and "excellent." Letter or percent grades for each subject replace such designations as the student progresses to the later elementary years and to middle or high school. At the preprimary, elementary and secondary school levels, report cards invariably include teacher comments on the student's academic and social progress.

In higher education, the report card is replaced with the "transcript," which is simply a running record of grades and courses studied, along with accumulated credits toward graduation.

republican (style of) education A term used by scholars to describe the basis of American education, which predicated the preservation of the new Republic on state-sponsored, universal public education. First articulated by John Adams and THOMAS JEFFERSON in the 1760s and 1770s, republican education was based on four beliefs: that the survival of the future nation would depend on responsible exercise of citizenship; that the responsible exercise of such citizenship was possible only with univer-

sal education of the citizenry; that the most effective way of educating the citizenry was through a system of hierarchal schools open to all—primary schools, academies, colleges and universities—and through which citizens would progress according to their abilities; and that the system would be tied to and controlled by public financial support and be supervised by public officials.

Quite simply, Jefferson believed, "If a nation expects to be ignorant and free, in a state of civilization, it expects what never was and never will be." A proponent of a nationally controlled system of education, Jefferson had the strong support of Adams, Benjamin Rush, Benjamin Franklin and James Madison. "... a people who mean to be their own Governors," said Madison, "must arm themselves with the power which knowledge gives."

Madison and Jefferson's pleas for constitutional creation of a national system of education were rejected by northern industrialists who depended on child labor for their profits and southern plantation owners who depended on slaves of all ages for theirs. Although a republican style of education eventually emerged in the United States, it required more than a century to evolve on a state-by-state basis—often (especially in the south) in forms that seemed as travesties to what Jefferson, Adams and Madison had envisioned.

ReQuest A "shorthand" title for a reading-instruction technique called questioning, in which teacher and students all read the same passage silently and then pose questions to each other and initiate involved discussion and analysis of the passage and its implications. At first, most questions are teacher-initiated, but the technique is designed to encourage increasingly active student ideation, questioning and in-depth analysis that provide the basis for answering the questions of others.

Research and Development Centers A group of 14 educational research centers established by the federal government in 1963 at major universities across the United States. Designed to bring groups of scholars from various disciplines together to work on educational improvement projects, the centers had a record of mixed success in producing major educational reforms in public education. Three decades after their founding, only half remained in existence—at Ohio State and Stanford Universities, at the Universities of Oregon, Pittsburgh, Texas and Wisconsin and at the University of California at Los Angeles (UCLA). However, the surviving centers—most notably Oregon, Stanford and UCLA—were responsible for developing a number of impressive and far-reaching programs, such as Stanford's Accelerated Schools Project for improving educational quality of American public schools.

(See also EDUCATION REFORM.)

"research" companies Commercial firms that sell students essays and term papers. A widespread industry on the Internet, but with branches near most four-year colleges and universities, research firms offer as many as 20,000 research reports—usually of poor quality—on virtually every topic covered in college courses. The firms generally charge between \$5 and \$10 a page for stock reports selected from their catalogs. They charge \$25, \$50 or even more per page for custom-made reports prepared to a client's specifications and written by free-lance writers. Although some states, such as New York and New Jersey, outlaw the sale of papers submitted to meet course or degree requirements, research firms skirt such laws by requiring purchasers to sign disclaimers that state that they do not intend to submit their purchases to academic institutions. Moreover, many research firms stamp each page with a statement: "Prepared by (name of firm), for research and reference use only." Students simply rewrite such

reports on their own paper before submission. No statistics exist on the number of such companies, the number of papers they provide students or the frequency of student reliance on such firms. A number of websites on the Internet offer anti-plagiarism services that detect research-company and other plagiarized student essays.

(See also PLAGIARISM.)

research university A university whose overall educational goals include development of new knowledge as well as the teaching of existing knowledge. Thus, faculty and staff at research universities generally divide their time (not necessarily evenly) between classroom instruction (in the sciences and arts) and laboratory and field experimentation and exploration (in the sciences) and historical and critical investigation (in the arts). The federal government provides nearly \$30 billion a year, or 60% of university research funds, which are now approaching \$50 billion a year. Johns Hopkins University has received by far the most for many years, with annual government grants of more than \$1 billion. No other institutions receive more than \$600 million, and only two—University of Washington and University of Michigan—receive between \$500 million and \$600 million a year. Seventy-five other institutions receive grants between \$100 million and \$500 million a year. Research accounts for about 11% of annual expenditures for all institutions of higher education and nearly 20% for some doctoral institutions.

Reserve Officers Training Corps (ROTC)

The generic term for a variety of programs, such as the AIR FORCE RESERVE OFFICER TRAINING CORPS, the ARMY RESERVE OFFICERS TRAINING CORPS and the NAVAL RESERVE OFFICERS TRAINING CORPS which prepare college students for commissions in the Armed Services. The ROTC programs were successor organizations to the ARMY

SPECIALIZED TRAINING PROGRAM and V-12 programs of World War II, which trained college students as officers at a time when the military academies could not fill the needs of the Armed Services. A once-ubiquitous presence on the larger college campuses, ROTC was forced off many campuses during the Vietnam War, when students and faculty protested its presence as an arm of the United States Department of Defense, which protesters perceived as an agency that was pursuing an illegal war. Harvard protesters forced the college to shut down in the spring of 1969, and students at KENT STATE UNIVERSITY in Ohio burned down the ROTC building on their campus in May of the following year. Two days later, National Guard troops that had been called on campus to quell the disturbances fired on students, hitting 13 protesters and killing four. One by one, colleges across America began severing their ties with ROTC until, by the mid-1990s, fewer than 200 colleges were still offering one or more ROTC programs. The late 1990s, however, saw a resurgence in the interest of young men and women in serving their nation, and the number of college and universities offering Army ROTC has now grown to more than 275 while nearly 90 campuses offer Air Force ROTC and 70 host the Navy ROTC program.

Most other colleges and universities, however, bar not only ROTC programs from their campuses but also military recruiters attempting to join corporate recruiters offering job opportunities to graduating seniors and those about to graduate from medical, law and other professional schools. Since 1991, the American Association of Law Schools, which includes 166 of the 188 accredited law schools in the United States, has insisted that prospective employers agree to a policy of nondiscrimination on grounds that include sexual orientation, and they barred military recruiters because of policies that prevent admitted homosexuals from joining the American armed services.

Congress responded with a law known as the Solomon Amendment, which withholds federal grants from colleges and universities that do not permit military recruiters on campus “in a manner at least equal in quality and scope” to civilian recruiters. Although most AALS law schools complied with the law, a coalition of 38 schools did not, and the U.S. Defense Department sued them to force compliance. Late in 2005, the U.S. Supreme Court began hearing arguments in the case, *RUMSFELD V. FORUM FOR ACADEMIC AND INSTITUTIONAL RIGHTS*, and in March 2006 it ruled unanimously in favor of the government. At stake were some \$20 billion in federal grants, or more than 10% of the annual revenues of American colleges and universities.

residence halls Those buildings on a school, college or university campus where students live during the school year.

residency requirement In education, a state or local ordinance requiring that students attending free public schools be residents of the school district. At the higher education level, all state universities require that students be residents of the state to be eligible for reduced tuition fees. Residency requirements may or may not include durational qualifications, depending on the level of education. Most state laws require that every elementary and secondary public school provide education to every child in their district immediately after the child’s family establishes residency. Most state colleges and universities, however, require that students spend at least one academic year in the state before granting the tuition reductions to which resident students are entitled.

residential academy In modern education, a state-financed boarding school for gifted high school students. Public residential academies are open to any students who pass qualifying

entrance examinations or, in the case of schools of music and art, have successful auditions or present acceptable portfolios. Residential academies were founded to meet the needs of widely scattered rural students too far from any major city to attend day **MAGNET SCHOOLS**. Attendance is usually limited to high school juniors and seniors mature enough to live away from home for long periods of time.

The North Carolina School for Science and Mathematics, in Durham, was the first such state-financed residential academy; like other, similar facilities, it is located near a thriving university and industrial research area, where the school can take advantage of skilled mentors and where students can avail themselves of advanced study and research facilities. Founded in 1980, it became a model for similar schools in many other states. By the mid-1990s, nine other states had such academies and others, including New York and Massachusetts, were establishing similar institutions. Among the earlier state residential academies (with the years of their founding) are the Louisiana School for Math, Science and the Arts (Natchitoches, 1983); Illinois Math and Science Academy (Aurora, 1985); Texas Academy of Mathematics and Science (Denton, 1987); Indiana Academy for Science, Mathematics and Humanities (Muncie, 1988); Mississippi School for Mathematics and Science (Columbus, 1988); South Carolina Governor’s School for Science and Mathematics (Hartsville, 1988); and Oklahoma School of Science and Mathematics (Oklahoma City, 1990).

residential school In modern education, any educational institution that provides room and board as well as regular instruction. Now usually synonymous with **BOARDING SCHOOL**, the term is occasionally used to mean an institution where children are committed involuntarily either for custodial care, in the case of the severely handicapped (mentally or physically),

or for treatment of severe health or behavioral problems. Custodial residential institutions have largely been replaced by so-called *HALFWAY HOUSES*, where small groups of youngsters live in homelike conditions within a community. Moreover, the federal *EDUCATION FOR ALL HANDICAPPED CHILDREN ACT OF 1975* requires education of the handicapped in the least restrictive environment appropriate for their needs.

resident student In higher education, a state university student who is a legal resident of the state and therefore entitled to a lower tuition rate than nonresident students. To qualify as a resident student, the individual must usually have been a legal resident of the state for at least one academic year prior to enrolling at the state college or university. The term *resident student* differs from *residential student*, referring to any student who lives on campus during part or all of the school year.

resistance training Instruction of elementary school children in techniques of rejecting temptations to participate in immoral or illegal behavior, ranging from name-calling or racism to chemical substance abuse or premature sex. Far from a proven approach, resistance training replaced traditional scare tactics aimed at frightening children with graphic representations of the possible effects of substance abuse and other self-destructive behavior (quite simply, too many youngsters were aware of some peers who had successfully survived drugs with few ill effects). Resistance training is based on teaching children decision-making skills to cope with a variety of stress situations, including peer pressure. While stressing the benefits of physical activity and fitness, resistance training uses role playing to give children practice in resisting the temptations of unacceptable behavior.

resource center A vaguely defined facility at secondary schools and colleges to supplement

traditional guidance facilities. Unrelated to *RESOURCE ROOMS*, the resource center is an area or room usually devoted to a broad range of nonacademic, nonbehavioral functions such as summer jobs, career counseling and, at the secondary school level, college selection. Resource centers are usually equipped with computers, computerized databases, Internet connections, videotapes and libraries of printed materials and catalogues that allow students to conduct independent research in a wide range of non-school activities.

resource room Technically, any classroom equipped for the special education of students with specific learning disabilities, mental or physical handicaps or emotional or behavioral problems. Staffed by specially trained resource, or special education, teachers, resource rooms are usually equipped to handle no more than four students at a time. Students meet for 30 to 120 minutes a day for individualized instruction—either in lieu of regular classroom work, in the case of elementary school students, or, in the case of secondary school students, during free periods or in lieu of one or more courses. Designed to supplement the regular classroom instruction of special-needs students, resource rooms contain special projectors, charts, screens and other devices that help retrain students to learn in ways that bypass specific learning disabilities. Moreover, they permit teachers to give students extra help with classroom instruction or homework and to monitor extended-time examinations—or simply to test individual students in an isolated area away from all distractions.

resource teacher A teacher trained in *SPECIAL EDUCATION* to meet the instructional needs of the learning disabled, the mentally or physically handicapped and the emotionally or behaviorally unadjusted. Resource teachers test, evaluate and design individualized instruc-

tional programs and techniques and provide instruction, either in the regular classroom in cooperation with regular teachers or in a special RESOURCE ROOM.

response to intervention (RTI) A groundbreaking approach to identification and treatment of learning disabilities before students begin to fall behind academically and require formal special education services or removal into classes separate from mainstream classes. Now mandated under the INDIVIDUALS WITH DISABILITIES EDUCATION ACT OF 2004 (IDEA), RTI replaced the traditional “wait-to-fail” model of treatment that depends on periodic IQ tests to determine whether there is a sharp discrepancy between a child’s abilities as measured by tests and actual classroom achievement. By then, however, the child has, more often than not, started failing, and the thrust of subsequent special education is necessarily centered on helping the child catch up—a difficult and often frustrating process for both children and teachers.

RTI, in contrast, is designed for all preschoolers—with or without disabilities. It allows a teacher to give the entire class a variety of weekly or twice-weekly “lessons” in areas in which most of them are having some degree of difficulty. When a child fails to respond to an intervention, the teacher uses a variety of research-based alternative “interventions” until the child understands and is ready to move on to the next lesson. In learning to read, for example, the student would begin by trying to read aloud while the teacher listens silently, intervening only to correct a reader error, which might range from mispronunciation to an inability even to guess at a word. The specific interventions would be drawn in descending order from a hierarchy of word-attack techniques: From “Try another way,” at the top of the hierarchy, to “Break the word into parts and pronounce each part separately.” When

the student finally identifies and pronounces the entire word correctly, the instructor stops the intervention and encourages the student to continue reading. In another approach, the student follows along silently as the teacher reads a passage; then the student reads the same passage aloud, receiving corrective feedback as needed.

RTI allows teachers to use so wide a variety of interventions to permit children to move ahead that it reduces to a minimum the number who fall behind and are left with no alternative but special education to help them catch up.

retention The forced repetition, for whatever reason, of a school year; the opposite of promotion. Retention is also sometimes used to refer to the penalty of detention at school for a specific period after the end of the school day, as penance for misbehavior.

retirement The voluntary or involuntary termination of service. Retirement in education is usually mandatory at a specific age, depending on the state and whether the institution is part of the public elementary and secondary education system or the state college and university system. The vast majority of school systems permit voluntary retirement with benefits for vested teachers at age 60. Public school systems require all teachers to participate in retirement programs that provide lifetime income and various benefits, including health insurance, disability insurance and death benefits for family survivors. Retirement programs vary from state to state, with some reserved for teachers only, others open to all workers in education, and still others open all state employees, including teachers. Funding also varies, with some programs funded entirely by the state and others funded partially by state contributions and partially by teachers themselves. Unvested plans are not portable from one state to another. Although always entitled to recover

the funds they invested in their pension plans, teachers are not entitled to state contributions until such plans become vested after the teacher has worked a specified number of years. The number varies from fewer than five to as many as 20 years, depending on the state; until a teacher has worked public schools in the state for the required number of years, he or she loses all claim to the state contributions in their plan if they move to a job in another state. In addition to income from the teacher's retirement program, teachers are also entitled to Social Security income and benefits. Retirement programs for faculty at colleges, universities and independent private schools are usually provided through the Teachers Insurance and Annuity Association and College Retirement Equities Fund (TIAA-CREF).

return sweep The shift of a reader's eyes from the end of one line to the beginning of the next. Inaccurate return sweep often causes readers to skip lines and lose the meaning of the passage they are reading. To overcome inaccurate return sweep, teachers often give students an opaque straightedge to block out all but the subsequent line.

Revolutionary War The war in which the American colonies declared and won their independence from England. For education, the Revolutionary War—or War of Independence, as it's called in Britain—was a source not only of immediate disruption but also of pivotal, long-term changes. Colleges were especially disrupted. Indeed, of all the colleges standing in the colonies, only newly chartered Dartmouth, in the forests of faraway New Hampshire, was left unscathed.

HARVARD COLLEGE's buildings were appropriated, forcing faculty and students to move to Concord. YALE had to move to three inland towns because of food shortages. Although classes resumed in New Haven in 1778, the

faculty and students were forced to join in the defense of the city against invading British troops the following year. King's College (now COLUMBIA) was the target of mob violence in New York and later occupied by British troops. It discreetly changed its name to Columbia after the war. Queen's College (now Rutgers) in New Jersey was, unfortunately, located in the center of the British stronghold in New Brunswick and was forced to move eight miles west during the war. The COLLEGE OF NEW JERSEY in nearby Princeton was used alternately as barracks for British and Continental troops, and the successive battles to keep or regain control of the town left Nassau Hall in ruins at the end of the war. The COLLEGE OF PHILADELPHIA (later the University of Pennsylvania) experienced similar changes of control and suspended all operations in 1777, as did the College of Rhode Island (Brown University), in Providence. The COLLEGE OF WILLIAM AND MARY suspended operations during the battle of Yorktown, which left the president's house badly damaged by French troops.

Education at the primary and secondary level, whether held in churches or in freestanding schools, also came to a halt wherever troops passed through or were stationed because such structures were the first to be commandeered as barracks. But when education resumed, following a battle or the war itself, it included an entirely new curriculum based on a new American history and ideology of individual liberty and freedom from the tyranny of state and church and the doctrine of predestination. The Revolutionary War, in short, produced a revolution in American education as well as in the political system: It gave rise to notions of REPUBLICAN EDUCATION, based on the belief that, if the people were to govern themselves effectively, they would have to be universally educated—the survival of the republic depended on an educated electorate. Thus, the Revolution promoted the concept of universal public educa-

tion, a concept that would take nearly a century to implement, but one that nevertheless became an integral part of American life.

The Revolution also opened the door to secular education. No longer was the Bible the sole reason for learning one's letters; mechanics, agriculture and the practical skills of building a new nation became the highest educational priorities. Divinity, which had been the primary purpose of pre-Revolution colleges, was nowhere mentioned. God and king would not govern the United States; humans would have to do the job. Even the English language was revolutionized, with the postwar publication in 1783 of NOAH WEBSTER'S new American spelling book, which threw off as many orthographical ties to England as possible. When, in 1819, THOMAS JEFFERSON founded the UNIVERSITY OF VIRGINIA, he purposely omitted all theological courses from the curriculum, which concentrated on architecture, mathematics, engineering, law, the sciences and arts.

reward and punishment training The application of behavioral theory, or behavior modification techniques, to instruction, providing the learner with pleasure for desirable behavior and pain for undesirable behavior. For some preschool learning, such as lining up to leave the playground at the sound of a whistle, quieting down when a teacher raises a hand and other behavior that requires minimal cooperation or understanding, reward and punishment can be effective teaching techniques. Praise, a teacher's smile, good grades (or their equivalent), extra time for play and public recognition, and frowns, threats, ostracism and loss of privileges are all relatively effective techniques for teaching certain types of behavior. But all studies of early learning techniques indicate that rewards and punishments do not help children learn more or get better academic grades. Reward and punishment training may even encourage cheating.

All indications are that the link between learning and the eventual reward or punishment (high or low grades, promotion or retention, etc.) is too obscure for preschool and early elementary school children to recognize. Moreover, in associating punishment and reward with academic work, children learn to substitute gratification from grades for the pleasure of learning and mastering new skills and knowledge—a concept that can render the youngster a disservice in secondary school and higher education.

rhetoric The art or skill of oratory that was an essential and required element of American and Western education until the last half of the 20th century. Derived from the Greek word *rhetor*, or orator, rhetoric (with grammar and logic) was one of the three preliminary subjects in the TRIVIUM, which, together with the four advanced subjects in the quadrivium, formed the traditional core curriculum of the seven LIBERAL ARTS in Western medieval universities.

Rhetoric's routes go back to the establishment of democracy in ancient Athens in 510 B.C. and the requirement that all male citizens participate in the assembly and the making of laws. Oratory became essential to success, influence and power in the assembly, and a group of teachers, known as the Sophists, immediately began developing and teaching rhetoric. The scholar Plato mocked the Sophists for corrupting rhetoric and focusing on persuasion rather than truth. Aristotle's *Rhetoric* supported Plato's ideas, saying that the function of rhetoric was not to appeal to listener emotions to persuade but to present a logical sequence of ideas that inevitably led listeners to the truth. He called rhetoric the sister art of logic.

Rhetoric remained essential in universities throughout the Middle Ages and well into the 18th century, so long as Western Europe, England and the American colonies comprised

what was essentially an oral culture. In colleges and universities, pedagogy was based on the lecture, the declamation and the disputation, with the master using the lecture as an oral textbook to expose a body of knowledge and pose questions about each element. Students, in turn, were expected to read all available books on the subject and “declaim,” or display that knowledge orally before the class. In the disputations that followed, students engaged in formal arguments or debates about questions raised by a moderator. Rhetoric was essential to successful declamation and disputation, and it was an integral part of the required curriculum at Harvard College, the first college founded in the American colonies in the early 17th century. Successful rhetoric required clarity of expression, style, quick wit and a depth of intellect and knowledge. As late as 1950, rhetoric remained a requirement at many of the most selective independent private secondary schools and colleges. As American educational culture became more audiovisual than oral, rhetoric gradually disappeared as a requirement—replaced with short, elective courses in “public speaking.”

Rhode Island Last of the original 13 states to join the Union and one of the first to establish a free, universal public education system. Officially named the State of Rhode Island and the Providence Plantations, Rhode Island by itself is a large island county in the middle of Narragansett Bay. “Discovered” by the Dutch explorer Adriaen Block (Block Island) and named *Roode Eylandt* (perhaps for its red clay), it was settled by the religious leader Roger Williams, who founded Providence in 1636 as a haven of religious tolerance. A deep believer in individual freedom of religion, he repudiated both the Church of England, in which he had taken orders, and the Puritans of Massachusetts, whom he had later joined, for using the powers of civil government to enforce religious princi-

ples. Banished from Massachusetts, he made Providence the first colony (and the first state) to impose complete separation of church and state and guarantee religious and racial toleration. As the first president of Rhode Island, Williams not only respected the rights of American Indians, he also saw to it that the colony provided a safe haven for Jews, Quakers and other persecuted religious groups. The oldest Jewish house of worship built in the Americas, *Touro Synagogue*, still stands in Providence.

In 1840, Newport became the first Rhode Island community to establish a free school. Because of religious tolerance, however, no single church was able to establish a statewide system of education, as the Puritan churches were able to do in Massachusetts, for example. The result was a more haphazard educational establishment, based largely on the willingness of a churchman here or there to teach the children of his congregation or on the desire of a community to read, write and calculate. One early teacher was the Baptist minister James Manning, who organized a Latin School in Warren, Rhode Island, in 1764. In 1765, he expanded and changed its name to the COLLEGE OF RHODE ISLAND. In 1770, he moved it to Providence, where it eventually was renamed BROWN UNIVERSITY.

Nevertheless, the development of education was slow, and by 1843 the state had so few schools and so illiterate a population that it faced an exodus of industry and trade to better cultured areas, such as Boston, New Haven and New York, which were training literate labor forces. At the suggestion of Horace Mann, who had founded the public school system in neighboring Massachusetts, the governor of Rhode Island and the legislature invited HENRY BARNARD to establish a statewide system of public schools and a teacher training school.

Rhode Island has nearly 330 public elementary and secondary schools with more than 161,000 students, of whom 26.5% are minority

children and 16% live in poverty. Academic proficiency of Rhode Island public schools is below average for the nation; student scores in all disciplines rank between 35th and 40th among the states. About 25,000 students attend private schools. The state has two public and 10 private four-year institutions of higher education. In addition to Brown, the state's private colleges include the renowned Rhode Island School of Design, which houses one of the foremost art collections of any college or university in the United States. Rhode Island has only one two-year college, a public institution. The graduation rate at four-year colleges is 67%.

Rhodes Scholarship A grant awarded annually to select college and university students from the nations of the British Commonwealth and from the United States, South Africa and Germany, for two years of study at the University of Oxford, England. The scholarships were established in 1902 under the will of Cecil Rhodes, the British statesman who, by the time he was 19, had accumulated a fortune as a diamond prospector in South Africa. In 1873, he returned to England and began studying part-time, dividing his year between his studies and further prospecting in the South African diamond fields. He eventually received his degree in 1881, by which time he had also amalgamated a large number of diamond claims into the giant De Beers Mining Co., which still controls South Africa's diamond production and trade. He spent the rest of his life engaged in South African politics and willed most of his personal fortune to the establishment of the Rhodes Scholarships.

Rice, Joseph Mayer (1857–1934) New York pediatrician whose 1893 book, *The Public-School System of the United States*, galvanized the first major educational reform movement in the United States. His concerns over health conditions in New York City public schools

and disease prevention among children provoked an interest in child development and modern pedagogy. He abandoned his practice to embark on an eight-year study of more than 100 school systems in Europe and the United States, focusing on the length of time different teachers with different pedagogies spent teaching children the same materials. After studying pedagogy in Germany from 1888 to 1890, he returned to the United States and spent the first half of 1892 studying the American public school system, visiting schools, talking with teachers, students and parents and attending school board meetings in 36 cities. Rice published his findings in the influential journal *Forum* and showed that a nationwide pattern existed of mindless teaching, dependence on rote learning, low academic achievement, administrative ineptitude, political corruption and public apathy.

He found several oases of educational reform, however. Minneapolis teachers displayed warmth and took individual differences into consideration. Indianapolis teachers tied learning in one subject to materials taught in all other subjects, while LaPorte, Indiana, teachers taught children to collaborate instead of compete in the classroom. In Chicago, the "father of progressive education," FRANCIS W. PARKER, was training teachers to use maps, drawings, models, stuffed animals and other concrete objects to teach literature, the arts and the sciences.

Rice urged the citizens across the United States to demand adoption of similarly "progressive" teaching methods in their own schools. Coining the phrase "progressive education," Rice predicted continued decline in educational quality unless public schools were "absolutely divorced from politics in every sense of the word." Although Rice himself was never directly involved in teaching, his book was the first to define educational problems as national in scope. As such, it became the definitive policy statement that coalesced a wide

range of educators and educational theorists into a single, nationwide “progressive education” movement. Rice exploded the myth that the more time allotted to teaching a subject each day, the more rapidly a child would learn. He conducted studies on how children learned to spell, then wrote *The Rational Spelling Book* (1898) for teachers. In 1903, he founded the Society of Educational Research and, a decade later, wrote *Scientific Management in Education*.

Rickover, Admiral Hyman George (1900–1986) United States Navy admiral and “father of the nuclear navy” and the U.S. nuclear submarine fleet. An engineer and scientist, as well as a Navy officer, Rickover veered into the field of education in the late 1950s, when he established nuclear-power schools for the United States Navy in Connecticut and California. Lamenting what he considered the poor educational foundations of American students in mathematics and science, he published a controversial book entitled *Education and Freedom* (1959), which warned that declining educational standards would threaten the preservation of freedom in American society. A strong advocate of the BACK-TO-BASICS movement, he heralded the need to train more engineers and scientists as essential to national defense.

Right to Read A federal program established by Congress in 1974 to improve the reading skills of American citizens and to eliminate illiteracy. The elements of the program included establishing and underwriting improved reading instruction in preschools and elementary schools, establishment of special reading programs for illiterate youths in and out of schools and expansion of the use of reading specialists in public schools. In 1978, Right to Read was absorbed into the more far-reaching, federal BASIC SKILLS AND EDUCATIONAL PROFICIENCY PROGRAM to improve all the basic academic skills of

American citizens, in mathematics and in oral and written communications, as well as in reading.

Robertson v. Princeton A landmark lawsuit in which the heirs of one of PRINCETON UNIVERSITY’S major benefactors sought to obtain control of the donated funds to ensure that the university honored the wishes of its benefactor. In one of the most important cases in the history of higher education, the heirs of the late Charles and Marie Robertson claimed that Princeton University deliberately spent several hundred million of Robertson family funds on purposes other than those designated by the Robertsons. Heir to the Great Atlantic & Pacific Tea Company (A&P) supermarket fortune, Mrs. Robertson married a 1926 Princeton graduate and, together, they gave Princeton \$35 million in 1961, a gift that subsequently grew into \$650 million, or 6% of Princeton’s endowment of more than \$11 billion. Inspired by President John F. Kennedy’s words, “Ask what you can do for your country,” the Robertsons earmarked the income from the gift to train graduate students at Princeton’s Woodrow Wilson School of Public and International Affairs to serve in the U.S. federal government—especially in the area of foreign affairs. The Robertsons’ son William, his two sisters and a fourth relative of the Robertsons claimed Princeton spent \$207 million for equipment purchases and for scholarships outside the Wilson School to students not bound for public service. They claimed the university failed to disclose such outlays—a charge the university admitted was true, but insisted it was a necessary result of the failure of enough students to apply to train for government service after the Vietnam War.

Filed in 2002, the suit was not the first of its kind. Indeed, in 1995, Yale University avoided just such a suit by returning a \$20 million gift to Texas billionaire Lee Bass after the school failed to implement a curriculum of

courses on Western civilization as specified by the donor. Because the Robertsons had forbidden commingling of their funds with Princeton's endowment fund, the university joined with the Robertson heirs in establishing a separate foundation to manage the money, with the Robertson family choosing three members of the seven-member board and Princeton selecting the remaining four. In the lawsuit, William Robertson charged that the university assumed Robertson heirs would lose interest in their parents' gift—a charge often leveled at colleges, universities and charitable organizations. Many colleges routinely rename buildings and other sites after the heirs of original benefactors die out, move away or otherwise fail to show interest in their ancestors' gifts. In the case of the Robertson gift, says William Robertson, "they miscalculated." The Robertson lawsuit sought to obtain family control of the foundation board from Princeton. Late in 2006, Princeton sought to placate the Robertsons (and settle the lawsuit) by creating five scholarships to encourage more students to pursue careers in foreign service, and the Princeton-controlled Robertson Foundation immediately dedicated \$10 million to the program.

Robinson, James Harvey (1863–1936) American historian, educator and champion of the "humanization of knowledge"—the writing and presentation of complex, often esoteric knowledge so that it can be more easily understood by the average student (and average citizen). As compulsory, universal education was spreading across the United States at the end of the 19th and the beginning of the 20th centuries, a few educators had become aware that textbooks in many complex subjects, including history, had been written for scholars and not for the ordinary student or citizen. A graduate of Harvard, the Illinois-born Robinson obtained his Ph.D. in Germany and returned to teach at the University of Pennsylvania in 1891. In

1895, he was appointed professor of European history at Columbia University, where he joined educator JOHN DEWEY and historian Charles Beard (1874–1948) in reforming the study and teaching of history by transforming it from a narrow, dull, chronological compilation of political, military and economic facts into a vibrant, comprehensive study of social, cultural, intellectual and scientific events that tied the lives and achievements of the past to the everyday lives of modern humans. Responsible for developing a humanized "new history," Robinson also led the development of a broader, humanized education movement that eventually affected the presentation of the social sciences, the sciences and even mathematics.

"It has become apparent that we must fundamentally reorder and readjust our knowledge before we can hope to get into the current of our daily thought and conduct," Robinson declared in *The Humanizing of Knowledge* (1923), the most important of his 24 books. "It must be re-synthesized and re-humanized. It must be made to seem vitally relevant to our lives and deeper interests." It must "bring home to the greatest number of readers as much knowledge as possible, in the most pleasing, effective, and least misleading manner." In 1919, Robinson left Columbia to help Dewey and others found the NEW SCHOOL FOR SOCIAL RESEARCH in New York City. Two years later, he left teaching and devoted the rest of his life to research and writing.

Rochester Method A system of instruction for the hearing impaired that combines the simultaneous use of finger spelling with speech.

Rochester Plan A much-heralded but largely unsuccessful 1987 program to reform public school education in Rochester, New York. The scheme began by giving teachers a 40% pay increase over three years and raising top salaries after 11 years of service, to \$45,000

a year. Special veteran teacher positions paying \$70,000 a year were established as part of a broad plan to establish school-based management, with faculty and administrators in full charge of the program for their school and its students, unhindered by the city's central school-board bureaucracy. The high pay, however, was accompanied by a new system of teacher accountability.

At the time, most of the system's 33,000 students were from poor families, and half were from single-parent homes. The city's black and Hispanic students were far worse off economically than their white classmates. Each teacher, however, was to counsel 20 students and get to know each student's family and become as involved as possible in personally assuring the student's progress. After parents, the school board and teachers agreed to the program, major corporations, such as Eastman Kodak, agreed to fund innovative programs and provide schools with teacher support and individual students with mentors.

Initially, the program produced some impressive results, especially for learning-disabled students, who received individual attention to a degree never seen before. Similarly, gifted students profited from the company mentorship programs that helped raise math scores. But on the whole, the program proved a dismal example of how and why educational reform programs have historically been doomed to failure in U.S. public school systems.

Parents resented teacher-mentors intruding in family life. Teachers, too, balked at their new counseling roles. Many feared they would lose merit pay raises when one of their students dropped out of school. Others claimed they lacked proper training as counselors and refused to be accountable for the actions of recalcitrant adolescents. Teachers also refused to take on additional responsibilities or invest the time and research to develop new, imaginative curricula. Parents and school board mem-

bers, in turn, grew concerned that they had no adequate system of accountability with proof positive that each teacher earning a merit pay increase actually deserved it. Moreover, they could not agree on whether to base teacher assessments on how well the students did or how much they tried.

The results of the Rochester Plan were decidedly mixed. After three years, the number of graduating high school seniors applying to college climbed from 41% to 48%, while the number of students taking regents exams climbed from 4,100 to 6,000. But the percentage of third and sixth graders achieving mastery of reading and math tests fell from 60% to 46%, and Rochester's high school dropout rate actually climbed during the first three years, from about 13% in the first year, to 14.1% the second, before settling at 13.8% in 1990. Educational researchers who studied the Rochester Plan's successes and failures agreed that its overall failure stemmed from the faulty assumption that four varied groups with sharply diverging interests—parents, teachers, administrators and school board officials and bureaucrats—could work in harmony.

Rockefeller, John D. (1839–1937) Oil magnate whose personal fortune reached \$1 billion and whose philanthropic contributions totaled about \$550 million, of which 80% went to four organizations: the ROCKEFELLER FOUNDATION; the GENERAL EDUCATION BOARD, which promoted universal education in the South and improved the quality of black education; the Rockefeller Institute for Medical Research (now, ROCKEFELLER UNIVERSITY); and the Laura Spelman Rockefeller Memorial, to promote worldwide child-welfare and social-science studies. Born in Richford, New York, Rockefeller attended public school in Cleveland until he was 16, when he went to work as a bookkeeper. At the age of 23, in 1862, he went into partnership with Samuel Andrews,

the inventor of an inexpensive oil refining process that helped the two men build the massive Standard Oil Co. By 1878, Rockefeller, at the age of 39, controlled 90% of the oil refineries in the United States and, soon after, all the distribution and marketing facilities as well. He retired in 1911 to devote the rest of his life to philanthropy. In that same year, the U.S. Supreme Court ruled that the Standard Oil Co. had violated antitrust regulations and ordered it split into the constituent corporations we know today.

Rockefeller Foundation A philanthropic organization founded in 1913 by JOHN D. ROCKEFELLER, Sr., "to promote the well-being of mankind around the world." Originally endowed with about \$250 million in personal funds from the Rockefellers, its endowment grew to about \$3 billion by the end of 1999, and it was awarding \$170 million a year in annual grants and fellowships. In 1918, the foundation absorbed the Laura Spelman Rockefeller Memorial to encourage worldwide child-welfare and social science studies. For most of the 20th century, the broad goals of the Rockefeller Foundation were to promote and support the arts, humanities and "contemporary values," with major gifts to American colleges, universities, museums and other educative institutions. In addition, its work supported "Conquest of Hunger; Equal Opportunity, International Relations and Population and Health." By 2000, 70% of its money was flowing overseas, and, as other FOUNDATIONS filled the coffers of American colleges and universities to overflowing, the Rockefeller group veered away from American higher education to focus on four other areas: culture and creativity, employment, food and health care.

Rockefeller University A unique graduate university in New York City, founded by oil magnate John D. Rockefeller in 1901 to con-

duct medical research. Originally called the Rockefeller Institute for Medical Research, it became a graduate institution in 1954, with programs leading to the Ph.D. It changed its name to Rockefeller University in 1965 and added a combined six-year graduate program leading to an M.D. and Ph.D. with nearby Cornell University Medical College. Rockefeller University's primary mission, however, remains research. It has more than 250 full- and part-time faculty and enrolls about 200 graduate students, about 75% in Ph.D. programs and 25% in the combined M.D.–Ph.D. programs. There are few formal courses, and most instruction is tutorial. The university is organized into about 60 laboratories, instead of departments, with each laboratory headed by a senior professor and staffed by other faculty members, as well as postdoctoral and graduate fellows. Student progress is described in annual reports rather than measured with conventional grades. The primary task of each laboratory is original research in the biological, behavioral and medical sciences, with a range of diseases under investigation at any one time. The university operates a small, private research hospital. Rockefeller University scientists have won nearly two dozen Nobel prizes.

role playing A common technique used by psychologists and, with the permission and supervision of the school psychologist, by teachers attempting to give students a broad understanding of major social problems. Role playing is often used in resistance training to teach children not only to "just say no" but also how to do it and feel comfortable about doing it. Reciting a list of "don'ts" and "dangers" is seldom as effective as staging a drama with student participants—one urging another, "Just try it," and the other, on stage, in front of peers, learning the confidence to say, "Get out of my face! Drugs are dumb! I didn't think you were that dumb!" Similarly, role playing, under

careful professional guidance, can be an effective method of teaching youngsters how to deal with such problems as race relations, teen suicide, sex and other social problems. Moreover, it can serve as an effective cathartic for feelings about racial tensions, parent-child tensions and teacher-student tensions.

rolling admissions A system whereby a college sets no fixed date for its admissions decisions, accepting applications at any time during the school year and responding to applicants within 30 days. Upon receipt of an acceptance, the student is usually given 30 days to decide whether to attend and to send in the appropriate deposit. Rolling early decision operates in much the same way, with colleges responding to applications within 30 days. As with conventional EARLY DECISION applicants, however, an applicant accepted under a rolling early-decision program is under a moral obligation to withdraw all other college applications. The only difference between conventional and rolling early decision is that applications are not reviewed at a fixed time.

Roman Catholic Church The largest, single, organized Christian church, made up of nearly 1 billion communicants who acknowledge the supreme authority of the bishop of Rome—the pope (or father)—in matters spiritual and, for many, temporal. Derived from the Greek word *katholikos*, meaning “universal,” the “Catholic” Church of Rome was, with few exceptions, the only Christian religion recognized by Western believers until the 12th century, when the first Protestants challenged papal authority. At the time, Catholic leaders were the temporal as well as spiritual rulers of western Europe. The Waldensians in France, under the leadership of Peter Waldo (1140–1217), were first to criticize the Catholic leadership publicly. Waldo declared that the excessive temporal practices of the Catholic

Church had no basis in the Scriptures and was simply the product of greed and arrogance. Although fiercely persecuted, the Waldensians survived in parts of France and Switzerland. Similarly minded Lollards, followers of John Wycliffe in France and England in the 1380s, and Hussites in 15th-century Bohemia followed the Waldensians in the spreading Protestant movement. The protests grew until 1517, when Martin Luther’s grievances against the church triggered a massive rebellion; within a century, dozens of Protestant sects had severed connections with Rome and challenged the need for priestly intermediaries in the relationship between God and humanity.

Wounded and somewhat weakened, the Catholic Church held on to whatever temporal powers it could, but gradually it recognized that its future growth lay not in sending military armies to conquer the world but in sending spiritual armies to convert the world. Education slowly replaced force as the church’s primary weapon. As early as 1493, when military conquest was still very much in favor, 12 priests accompanied Christopher Columbus on his second voyage and established the first see in the New World at Santo Domingo (in what is now the Dominican Republic), the first European settlement in the New World. The second American see was established at Santiago de Cuba in 1522 and the third in Mexico in 1532. Between the middle of the 16th century and the end of the 18th century, Spanish Franciscan, Dominican and Jesuit missionaries emanating from those three sees established communities in what later became Florida, Texas, New Mexico and California. At the same time, French missionaries were establishing settlements in present-day Maine, in northern New York and around the Great Lakes and upper Mississippi. The Catholic population reached about 30,000 by the time of the Revolutionary War, increased to 250,000 by 1820 and 1 million by 1840.

Like other Americans after the Revolutionary War, most Catholic families were content to send their children for secular education in Protestant-dominated common schools and for spiritual training to their local priest on weekends. Like other minority groups of the day, Roman Catholics were largely scattered across the rural United States and far from any central diocesan control.

The wave of Catholic immigrants from Europe that settled in major cities following the Civil War provoked a change in the thinking of the Catholic hierarchy. Fearful that Protestant-dominated common schools would, in the process of "Americanizing" immigrant children, also "Protestantize" them, the Third Plenary Council of Baltimore in 1884 ordered the construction of a national Catholic school system. The church decreed that within two years a parochial school was to be built near each Catholic church. It decreed that all parents would be obliged to remove their children from secular schools and send them to parochial schools. The decree called for the construction of Catholic high schools, academies and colleges and the establishment of diocesan boards of education. It also crowned this system with the construction of Catholic University, in Washington, D.C., and from that point until the middle 1960s, the official goal of the Catholic Church in the United States was to send every Catholic child to Catholic schools and colleges and thus preserve Catholicism in America. In addition to founding Catholic University of America, by 1960 the Catholic Church had been responsible for establishing 13,000 elementary and secondary schools and nearly 400 colleges in the United States, although the number subsequently diminished to just over 8,000 elementary and secondary schools and fewer than 240 colleges and universities.

(See also CATHOLIC SCHOOLS.)

romance languages A group of modern languages derived primarily from Low Latin

and spoken by about 400 million people, largely in Europe. Spanish and French are by far the most widely spoken. They are also the most studied in fulfillment of American secondary school and college foreign language requirements. Other romance languages include Italian, Latin and Friulian, all spoken in Italy; Portuguese; Ladino, a Judaeo-Spanish language originally spoken in Spain; Catalan and Valencian, spoken in Spain; Andorran; Romansch, spoken in Switzerland, and Romanian.

Roosevelt, Franklin Delano (1882–1945)

Thirty-second president of the United States and the only president to be elected to four terms in office. More than any president before him, he involved the federal government in the creation of broad educative institutions through agencies to provide grants for the fine arts, theater, music and literature. His efforts did not grow out of his personal love of the arts, but from a need to get millions of unemployed people back to work during the Great (economic) Depression of the 1930s—including the thousands of unemployed writers, artists, actors and dancers.

Born to wealth in Hyde Park, New York, Roosevelt was educated at the elite Groton School and Harvard University and earned his law degree at Columbia University. His political career began in 1910 and carried him to the New York governorship, in 1928 and in 1930, and to the presidency, in 1932, as the nation cried out for help in the midst of its economic agonies. In his first famous "100 Days" in office, he enacted sweeping economic and social reforms—the "New Deal"—that reorganized the American political, financial, economic, industrial, agricultural and social systems. In effect, the New Deal transformed a laissez-faire economy and social system into a modified socialist state, with myriad Washington agencies regulating key industries and providing the American people with annual

stipends designed to keep them fed, clothed and housed.

A primary thrust of the New Deal was to put as many as possible of the nation's 13 million unemployed back to work. Roosevelt's first effort came in 1933, when he issued an executive order creating the CIVILIAN CONSERVATION CORPS, putting young men 18 to 25 to work on conservation projects and providing subsistence funds to keep youngsters 16 to 24 in school. Funds were also provided so that needy young people who had quit school could be put to work on neighborhood projects. By 1935, more than a half-million young men were working in the CCC, not only contributing to the conservation needs of their country, but also earning money for themselves and learning useful trades they could take back to civilian life after their year of service expired. World War II ended the need for the CCC nine years later, by which time it had enrolled some 2.5 million men, who had planted billions of trees, halted the erosion of millions of acres of soil and created hundreds of parks and recreation areas.

Recognizing that unemployed artists and writers were just as entitled to work as any other segment of the unemployed, Roosevelt backed the establishment in 1933 of the Public Works of Art Project, which hired 3,000 artists across the United States to decorate public buildings with murals depicting American history. The project exposed millions of otherwise isolated rural Americans to fine art and history lessons. With the establishment of the WORKS PROGRESS ADMINISTRATION (later, the Works Projects Administration) in 1935, the Roosevelt administration incorporated the Public Works of Art Project into a broader FEDERAL ART PROJECT that included commissions for artists, musicians, dancers, playwrights, poets and other unemployed artists. In all, the Federal Art Project engaged more than 100,000 writers, artists, musicians, dancers and other artists, who not

only earned subsistence incomes to carry them through the Great Depression but also brought culture to some of the most remote areas of the nation. The program marked the beginning of massive federal government sponsorship of the arts. It shifted its focus during World War II to sponsorship of massive programs of entertainment for American service personnel throughout the world. After the war, the program continued with the establishment of the NATIONAL FOUNDATION ON THE ARTS AND HUMANITIES.

ROTC The popularly used abbreviation (pronounced "Rot-C") for the RESERVE OFFICERS TRAINING CORPS, which prepares college and university students for commissions in the armed services.

rote counting A recital of numbers in order and by memory, with little or no understanding of the meaning of each number. The words one, two, three, four may have as little meaning to a child as fee, fie, fo, fum—simply a series of sounds the child has memorized in a specific order. Although rote learning can often be a first step in learning, the actual learning process does not begin until the child can associate each sound with a specific, concrete object.

rote learning The acquisition of information by memorization. Often the beginning of knowledge—and often essential to the acquisition of knowledge, understanding and higher-order conceptualization—rote learning does not encourage the development of reasoning and other problem-solving skills. It can, however, place the necessary facts at the learner's immediate disposal for the solution of complex problems. At the simplest level, for example, a thorough knowledge of the multiplication tables gives a student all the tools necessary for solving complex multiplication problems, once

the student has mastered adequate problem-solving and higher-order reasoning skills. Exclusive use of rote learning, however, can interfere with development of higher-order reasoning and problem-solving skills, especially in abstract mathematics and science courses.

Rough Rock Demonstration School One of several schools that the BUREAU OF INDIAN AFFAIRS operated on Indian reservations for American Indian children in the 1960s. Located in Lukachukai, Arizona, on the Navajo Reservation, the school was used by BIA as an instrument of Indian education reform. Responding to a barrage of criticism that it was keeping Indian children buried in ignorance, BIA obtained extra funding from the Office of Economic Opportunity in 1964 and introduced many standard public school methods of instruction at the school. It brought Navajo parents into the school planning process, incorporated Navajo culture into the social studies program, opened the school to adult education, encouraged formation of PTAs and other home-school ties and opened school services and facilities to all community residents.

Although praised by Navajo leaders for improving school-community relations, the BIA was ridiculed for doing nothing more than using conventional public school methods to update what were essentially backward, 19th-century schools. The program produced no substantial improvements in student academic achievement. In 1972, the BIA effort became superfluous, with passage of the Indian Education Act authorizing a battery of new educational programs for Indians, including grants to local educational agencies and special literacy and job-training programs for Indian adults. The programs reached about 78% of the more than 400,000 Indian children in the United States.

Two subsequent laws also improved Indian education. The Indian Self-Determination and

Education Assistance Act of 1975 and the Indian Education Act of 1978, which together stripped the Bureau of Indian Affairs of many of its powers and turned control of education over to Indians.

(See also AMERICAN INDIANS.)

Rousseau, Jean-Jacques (1712–1778) Swiss-born philosopher, author, political scientist, musicologist and one of the most influential minds in the so-called Age of Enlightenment. In the field of education, his novel *Emile, ou l'Education* (1762) was one of the most influential documents in 18th- and 19th-century education, offering a new theory of education based on the principles of natural child development and the futility of attempting to treat children as small adults. In the novel, the boy Emile learns by experience and natural observation, using his senses to acquire new knowledge and acquiring new skills as he becomes developmentally ready.

In 1775, the pioneer Swiss educator JOHANN HEINRICH PESTALOZZI attempted to apply the educational techniques of *Emile* on his estate, where he opened a school for poor children, who would ordinarily have gone uneducated. After five years of experimenting with "Emilian" educational methods, he closed the school for lack of funds. Apparently he had enjoyed relatively little progress in educating the children, but he later applied his methods successfully in a well-endowed school he founded for wealthier children. Pestalozzian methods, derived in part from Rousseau's *Emile*, became the foundation of modern elementary education in Europe, England and the United States. Ironically, as insightful as Rousseau was to the educational needs of his fictional Emile, he abandoned his own children, leaving them to grow up in orphanages.

Roxbury, Massachusetts Site of one of the first schools in the American colonies, where a

free school was established by consensus of the residents in 1645, 10 years after the first school had been established in Boston. The school was free, however, only to the children of subscriber families who agreed to contribute to the £20 annual stipend for the schoolmaster. Now called the Roxbury Latin School, it is a private day school for boys.

(See also MASSACHUSETTS.)

Royal Society of London for Improving Natural Knowledge A scientific organization officially founded in 1660, but convening informally beginning in 1645 at regular meetings of England's leading scientists. It rivaled Oxford and Cambridge Universities as a source of the latest scientific advances, simply because it did not restrict members to the stifling rules and regulations of a university. Its membership included the foremost thinkers and scientists from the American colonies as well as England, and its findings formed the basis of much of the early science curriculum of American academies and colleges. Among its members were Robert Boyle (1627–91), FRANCIS BACON, JOHN LOCKE, ISAAC NEWTON and Connecticut governor JOHN WINTHROP, JR., who was also a chemist and mineralogist and who provided a steady flow of materials and learned observations to the society from America. COTTON MATHER, WILLIAM PENN and JOHN MORGAN, the pioneer of American medical education, were all members of the Royal Society, and BENJAMIN FRANKLIN used the society as a model for forming the AMERICAN PHILOSOPHICAL SOCIETY.

Rugg, Harold O. (1886–1960) American educator, author and leader of the RECONSTRUCTIONISM movement that sought to use education to reform the American social system during the devastating economic depression of the 1930s. Born in Massachusetts, he received his advanced degrees at Dartmouth College before teaching at three universities in Illinois

and eventually becoming a professor of education at Teachers College, Columbia University, in 1920—joining a faculty that included John Dewey and a crowd of Dewey disciples who believed formal education should imbue all children in the principles of democracy.

Rugg and his colleague GEORGE S. COUNTS attempted to translate reconstructionism into practical terms. While Counts tried to whip American teachers into a reconstructionist frenzy, Rugg and his Teachers College students spent the years from 1921 to 1928 producing the 12-volume Rugg Social Science Pamphlets, which became the most popular social-studies texts of their day. Both critical and appreciative of the United States, the pamphlets were distributed to more than 5 million American schoolchildren in about 5,000 school systems—until 1940, when patriotic and business groups attacked them as subversive and effectively banned them from almost all American schools. A group in Bradner, Ohio, even burned them.

A veteran of World War I and a prolific author, Rugg wrote the influential *The Child-Centered School* (1930), *Culture and Education in America* (1931), *American Life and the School Curriculum* (1936), *Progressive Education at the Crossroad* (1938), *That Men May Understand* (1941), *Foundations for American Education* (1941), *The Teacher in the School and Society* (1950) and *The Teacher of Teachers* (1952).

rules and regulations A codification of permissible and impermissible student behavior and academic effort in a school or college and the consequent rewards and discipline for such behavior. According to U.S. Department of Education studies, the most effective elementary, middle and high schools have clearly defined, strictly enforced rules of academic conduct and social behavior. Rules catalogs issued to students and parents usually indicate in clearest terms the school's policies for han-

dling misconduct, absenteeism, lateness, disruptive behavior, cheating, vandalism, violence, physical threats or verbal abuse, theft, weapons possession, racism or bigotry, gambling, use of tobacco, drugs or alcohol, and even use of radios and tape players with headphones. The rules state whether there is a dress code and describe it and whether there is a code of conduct for students when they are not in school. Rules booklets also state clearly the discipline and possible punishments for all infractions.

Rumsfeld v. Forum for Academic and Institutional Rights (FAIR) A U.S. Defense Department lawsuit challenging the right of 38 law schools to bar military recruiters from their campuses. Since 1991, the American Association of Law Schools, which includes 166 of the 188 accredited law schools in the United States, has insisted that prospective employers recruiting graduating seniors on their campuses agree to a policy of nondiscrimination on all bases, including sexual orientation. These schools barred military recruiters because of the military's policies that reject admitted homosexuals from the American armed services. Most American undergraduate and graduate schools followed suit, and Congress responded with a law known as the Solomon Amendment, which withholds federal grants from colleges and universities that do not permit military recruiters on campus "in a manner at least equal in quality and scope" to civilian recruiters. Although nearly \$20 billion in federal grants, or more than 10% of the annual revenues of American colleges and universities, were at stake, most colleges and universities continued to bar military recruiters from American campuses, and the Defense Department filed suit and won a unanimous Supreme Court ruling in March 2006, forcing compliance with the Solomon Amendment. "The case treats law students as though they can't think for themselves," argued an attorney for law students at three law

schools, who filed a friend-of-the-court brief on behalf of the government. "They are smart enough to understand that law schools do not endorse every employer's business practices," their attorney concluded. On March 6, 2006, the Supreme Court agreed unanimously with the government position, saying that the Solomon Amendment does not violate rights to free speech by universities and that it affects only "what law schools must do . . . not what they may or may not say." Solomon requires law schools to "afford equal access to military recruiters," but it "neither limits what law schools may say nor requires them to say anything." They remain free to disavow the military, to denounce it or even to help students organize protests.

runaways A social problem that is largely ignored by government, by schools and, at times, by parents—often because of helplessness or ignorance. The U.S. Department of Health and Human Services estimates that as many as 2 million children run away from their homes each year—more than one-third because of physical or sexual abuse, 44% because of long-term problems and 20% because of temporary crises. About 25% are labeled "incorrigible, hard-core street kids," of whom three-quarters engage in some kind of chronic criminal activity and half in prostitution. An unmeasurable number are so-called throwaways, who have been abandoned by their families or literally expelled from the family home. Approximately 5,000 unidentified bodies of murdered children and youths are found each year. There is no gender, racial, ethnic or economic pattern to the runaway population. There is a seasonal pattern to the problem, however. The largest percentage of children—about 40%—run away in summer; 20% run away in each of the other seasons, though 8% are away for only two hours or less and 30% are away for three to 10 hours. Another 30%,

however, are away from 12 to as many as 50 hours, 10% from 52 to 100 hours, and 13% for more than 100; 9% simply disappear.

Most communities have few government-operated facilities for runaways seeking help, although volunteer groups and some state agencies maintain about 2,300 shelters, hotline agencies, foster-care organizations and other community-based agencies in all 50 states and Puerto Rico. Towns and states with shelters, however, usually do not have enough beds to accommodate children and youths seeking help. Few have any support services other than bathing facilities, clean beds, food and fresh clothes. In 1984, Congress enacted the Runaway and Homeless Youth Act, which provided funds for the Department of Health and Human Services to underwrite costs at 260 runaway and homeless youth shelters across the United States. With an average of more than 600 students under his or her care, the average high school guidance counselor is particularly ill-equipped to identify potential runaways and provide preventative counseling or turn a youngster over to a social worker or psychologist.

(See also HOMELESS CHILDREN.)

rural education An increasingly archaic term referring to the imagined disparities between educational quality in isolated rural communities and small towns and in larger suburbs and cities. Small student populations, low tax bases, high teacher turnover rates and lack of adequate technological facilities and equipment did indeed reduce educational quality of some rural schools for many decades. Until the 1980s, many rural communities in the United States continued to rely on one- or two-room schoolhouses, with one or two instructors teaching kindergarten through twelfth grade in a single room. In 1980, there were more than 1,000 such schools still in operation, but more than half disappeared over the ensuing decade, and they are expected to

become extinct by the year 2000, as the rural population declines. In 1900, more than 40% of the American population lived on farms. By 1940, the percentage had dropped to 23%. By 1980 it was 3% and in 2000, under 2%—despite a vast expansion of lands under cultivation to 940 million acres.

Most rural states have now reorganized their educational systems to eliminate the need for one- and two-room schoolhouses. Buses drive students to and from centrally located schools, and even the most isolated schools have access to a wide array of electronic systems that permit use of videotapes and other forms of instruction in the classroom. Interactive television systems allow one teacher to instruct and react with students at a number of schools within the same region. Moreover, many states now provide fleets of portable classrooms for schools whose student populations are not large enough to justify investment in costly, specialized facilities for computer training, woodworking or foreign-language study. Specially equipped portable classrooms bring such facilities, along with special teachers, to a school for one term, then move on to another school. In some states, portable classrooms move computers from school to school in outlying areas; in other states, they carry science labs, fine arts programs and specialized vocational training facilities to schools that would otherwise lack such programs.

Much of the statistical evidence for the poor quality of rural education can be traced to what is now recognized as a largely invalid, 20-year study of 440,000 high school students, started in 1960 and called PROJECT TALENT. It found that seniors in large high schools performed better in mathematics and science than seniors in small high schools and that student achievement tended to increase with teacher salaries. Recent studies, however, found that students in schools with fewer than 300 students registered higher mathematics, science and SAT scores

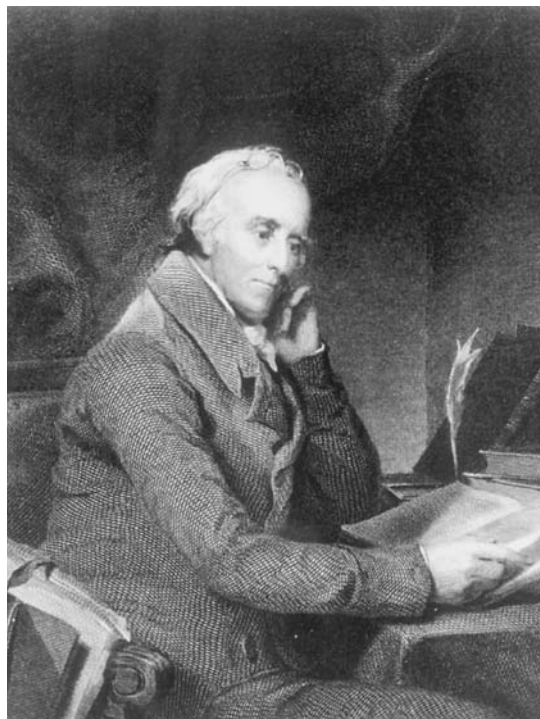
than students in larger schools. The same studies found that students in several relatively rural states—Iowa, Kansas, Minnesota, Montana, Nebraska, North Dakota, South Dakota, Utah, Wisconsin and Wyoming—obtained the highest average scores in the United States. Recent test results from the NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS (NAEP) found that 11 of the 12 states with the highest student proficiency in eighth grade mathematics depended almost entirely on rural education. Although Massachusetts students finished first in the nation (not just math, but in all categories), Minnesota finished second, followed by North Dakota, Vermont, South Dakota, Montana, Wisconsin, Iowa, Kansas and Nebraska. Students in rural states were only slightly less proficient in reading, and nine states, Maine, New Hampshire, North Dakota, Montana, Vermont, South Dakota, Minnesota, Wyoming and Iowa, finished in the top dozen states. (Massachusetts again placed first.)

Although 20% of American school children—8.8 million—are enrolled in rural schools, their rates of academic success or failure may have less to do with their geographic settings than their economic settings. Indeed, the Rural School and Community Trust, which publishes regular comprehensive reports on rural education, found rural students in southern states with high poverty rates—Mississippi, New Mexico, Kentucky, Louisiana, Alabama, Oklahoma, Arkansas and South Carolina (tied), West Virginia and Georgia, in that order—to be the most “educationally needy” in the nation. Mississippi students also scored lowest in NAEP testing, while Alabama, New Mexico and Louisiana scored almost as poorly. *Rural* is defined by the U.S. Census Bureau as nonurban areas with fewer than 2,500 people and small towns with populations of 25,000 or less.

Rush, Benjamin (1745–1813) American physician, statesman, signer of the Declaration

of Independence and champion of universal public education. A founder of Dickinson College in 1773, Rush’s long-term influence on American education was in his articulation and perpetuation of a liberal educational ideology that he would never live to see implemented.

Born in Philadelphia and educated at the College of New Jersey (now Princeton), he earned his M.D. after six years as an apprentice to a Philadelphia physician and two years of study at the University of Edinburgh, in Scotland. He returned to Philadelphia in 1768, became the first chemistry professor ever at the College of Philadelphia (now the University of Pennsylvania), and in 1770 published the first American chemistry text, based on his lectures. He also entered private practice and, because of his location, began treating and establishing friendships with the most important colonial



Benjamin Rush (Library of Congress)

leaders, who were gathering in Philadelphia to declare independence from England. He welcomed and entertained John Adams, GEORGE WASHINGTON and THOMAS PAINE and inoculated Patrick Henry against smallpox. Through such associations, he won election to the Second Continental Congress in time to sign the Declaration of Independence.

Named to the medical department of the Continental Army, he fought constantly with superiors over unhealthy conditions in military hospitals and finally resigned his commission in 1778. After the Revolution, he spent the next decade on "a one-man crusade to remake America," campaigning for free schools, a national university, prison reform, free postage for newspapers, churches for blacks, temperance, emancipation, education of women and abolition of capital punishment.

He was a staunch proponent, along with Adams, Jefferson, Franklin and Madison, of the REPUBLICAN (STYLE OF) EDUCATION and espoused establishment of a national system of universal education. His—and their—efforts to include educational rights in the Constitution were defeated by the fierce opposition of northern mill owners who depended on children for cheap labor and southern plantation owners who depended on slavery for free labor. Like Jefferson, he turned his attention to his native state, Pennsylvania, where he attempted to establish a three-level system of schooling, with free district, or township, schools to teach reading, writing, arithmetic, English and German (for the Pennsylvania "Dutch," Deutsch). The state would have four regional colleges to teach higher mathematics and the sciences, and a university in Philadelphia would teach law, medicine, divinity, politics, economics and natural philosophy. "The university will in

time furnish masters for the free schools, while the free schools, in their turns, will supply the colleges and university with scholars, students and pupils," said Rush. "The same systems of grammar, oratory and philosophy, will be taught in every part of the state. . . . Our schools of learning, by producing one general and uniform system of education, will render the mass of people more homogeneous, and thereby fit them more easily for uniform and peaceable government."

Rush saw colleges as "true nurseries of power and influence" and favored establishment of a national university that graduates of state universities would be required to attend to receive training for public service. Rush also believed that women should be educated as wives and mothers in schools that would teach reading, writing, grammar, arithmetic and bookkeeping, geography, history, astronomy, chemistry, natural philosophy, vocal music, dancing and the Christian religion. He called for establishment of post offices and urged free distribution of newspapers as "vehicles of knowledge and intelligence" and "sentinels of the liberties of our countries." He protested corporal punishment, denounced slavery and espoused a belief in the perfectibility of human beings through education. In 1786, he established the nation's first free dispensary.

In 1791, he rejoined the faculty of the University of Pennsylvania and helped organize its medical school, the first in the United States. A leader in the battle against the Yellow Fever epidemic in 1793, he devoted the rest of his life to teaching and research. Often called the "father of American psychiatry," he wrote the first discourse on mental illness published in the United States, *Medical Inquiries and Observations Upon the Disease of the Mind* (1812).

sabbatical Also called sabbatical leave; a year's leave every seven years for teachers in institutions of higher learning to rest, travel or pursue research. Institutions generally limit the number of sabbaticals granted in any given year. Although some offer sabbaticals with full pay, others offer full pay for only a half-year's sabbatical or half-pay for a full year's leave. Some institutions offer no pay for such leaves, although the institution offices and research facilities remain at the disposal of the professor on leave. The term derives from the Mosaic law of ancient Judea under which farmers traditionally left each acre of land fallow for a year after six consecutive harvests.

safe havens Locally organized programs under a variety of names whereby storekeepers and individual homeowners post identifying signs such as "SAFE HAVEN" and pledge to provide temporary harbor to any fearful, troubled or endangered child on his or her way to or from school (or at any other time, for that matter) until parents or authorities can be summoned. In communities with safe haven programs, parents and teachers routinely walk their children along the safest routes home, pointing out and stopping to visit safe-haven volunteers. The latter pledge to remain at their posts, watching the nearby streets and sidewalks for specific hours each morning before school opens and for a similar period after school closes.

Safe Schools Act of 1994 A federal law awarding competitive grants to local schools, school districts and educational agencies to implement VIOLENCE-prevention activities, including ZERO TOLERANCE discipline that automatically dispenses student punishment up to and including expulsion for any infraction of school rules. The law strips federal aid from any school that fails automatically to expel any student possessing drugs or weapons.

safety education An amorphous form of instruction relating to accident prevention and minimization at all levels of human activity, ranging from play at preschool and school to vehicle operation to activities in the workplace. Formal safety education began in Massachusetts, which passed a law in 1867 forcing industry to provide paid factory inspectors in each plant. In the 1920s, safety education was integrated into employee training at most plants throughout the United States.

In American schools, safety education begins with fire drills in some preschools and in all kindergartens. Students walk in pairs, hands clasped, in double file behind the teacher, who leads them out of the school building to a safe vantage point. Practice crossing streets in the presence of school crossing guards, recognition of SAFE HAVEN facilities and learning to travel in pairs or groups are all basic elements of early safety education at

elementary schools. In middle school and high school, safety education includes hygiene, social and sexual education and driver education. Methods of preventing venereal diseases, AIDS, premature pregnancy, abstinence from drugs and chemical substances and careful methods of driving vehicles all fall under the broad category of safety education.

safety patrols School-organized groups of older elementary and middle-school students at least 10 years old who are charged with ensuring the safety of students at street crossings near the school by instructing, directing and controlling car and pedestrian traffic. Usually accompanied by adult crossing guards, with large, appropriately colored "stop" and "go" signs, school patrol members wear brightly colored, phosphorescent Sam Browne belts. Use of school patrols must be approved by each district and state and is not without some controversy over the question of district liability in the case of injuries. The children patrolers are not employees and, therefore, not covered by employee compensation insurance. The question of protecting such children has been resolved differently from community to community, depending on state laws.

"safety" school A colloquial term for a school or college where a student applicant's academic and other qualifications would clearly rank the student in the top third or quarter of existing classes. In effect, a safety school is one for which the applicant is clearly overqualified and likely to gain admission with ease—especially if the student is asking for no financial aid. Many students make the mistake of selecting such schools quite casually, solely on the basis of ease of admission. For any given student, however, there are myriad safety schools that can provide exciting, challenging college careers, and most authorities on college admissions urge applicants to select their safety

schools with as great, if not greater, care than their so-called dream or reach schools for which they may be underqualified.

St. George's Episcopal Church (New York City) Pioneering institutional church that responded to the influx of poor immigrants by converting itself into a free, educative institution, open to all on a nonsectarian basis. The Reverend William S. Rainsford assumed the rectorship of St. George's on Stuyvesant Square in January 1883. An Irish-born, Cambridge-educated veteran of mission work in the poor East End of London, he brought with him a new vision of a Church dedicated to the promotion of social justice and the fulfillment of the physical and educational, as well as the spiritual, needs of its parishioners. It was a new concept for New York and, indeed, for the United States.

Before accepting his post, Rainsford demanded that the vestry declare St. George's "a truly democratic church," with all pews free. He insisted that all committees be appointed by him, and he demanded an annual discretionary fund of \$10,000 for evangelistic work. Astounded, the members of a tense and silent vestry eyed each other angrily until banker J. P. Morgan, Sr., forcefully intoned, "Done!" Rainsford proceeded to transform the church into one of New York City's most remarkable social and educative institutions. He declared St. George's a free church, open to all, and preached an expansive evangelical message that declared all equal in the eyes of God, with equal access to His word.

He opened the church from 8 A.M. to 5 P.M. daily and acquired an adjunct building called Memorial House, where young people flocked to read, dance, play games and listen to music. He organized a trade school for boys to learn carpentry, printing, mechanical drawing, electrical and metal work and applied design. The public schools of New York, he declared, "are lamentably behind the times, and what the

church should do is set an example of a higher standard for growing boys and girls."

Rainsford did not ignore spiritual training. He reorganized Sunday School into graded classes and chose well-trained teachers with warm personalities as well as a knowledge of the Scriptures. He set up a circulating library and organized a Battalion Club for boys 14 to 18, with a program of military exercises, a rifle range and a summer camp. He also organized a Girls' Friendly Society, with a program of handicrafts, cooking, sewing, dressmaking, calisthenics and reading. He set up a Men's Club, with a billiard room, a common room and a gymnasium, and a Women's Society, with an instructional program on child-rearing and homemaking. For the poor, he established a program of relief, with a grocery department, a clinic, a summer camp and an emergency fund for the impoverished.

By the end of the decade, the church counted more than 4,000 parishioners, including Morgan, who worked unceasingly as a warden and volunteer. By 1899, more than a dozen institutional churches had been established in New York, along the line of the St. George's model. Across America, there were 173 such institutions. Many similar institutions emerged elsewhere in the United States in the decades that followed, but the range of offerings gradually shrank, as quasi-religious organizations such as the YMCA, secular organizations such as the Boys Club, and school organizations began offering similar social services.

To one degree or another, however, the institutional church and religious center survives to this day. It is a uniquely American educative institution, whose roots stretch back to St. George's Episcopal Church and the 1883 arrival of the Reverend William S. Rainsford as its minister.

salutatorian Usually the student who ranks second academically in the graduating high school or college class. A peculiarly American

honor, the salutatorian traditionally gives an opening salutation, or short speech, welcoming guests to graduation ceremonies. Until the mid-19th century, the salutary address was usually delivered by the head of the school or faculty. For reasons unknown, the salutation began to be turned over to the second student in the class at some American colleges as a form of formal recognition, second only to that of the valedictorian. The latter is usually the graduating class's top student, who delivers the valedictory, or farewell address. Often, the honor of delivering the salutatory was given to the highest ranking student of the junior class who, on behalf of the student body, bid farewell to the graduating seniors. This custom seems largely to have disappeared.

Salvation Army An international religious and social service organization and one of the most far-reaching educative institutions among the American poor during the late 19th and early 20th centuries. Now one of the largest U.S. charities, with more than \$1.2 billion in annual revenues, the Salvation Army began in Cornwall, England, in 1865, when William and Catherine Booth decided to go to the slums of London's East End to bring salvation and a variety of social services to vagrants, prostitutes, alcoholics, thieves and others whom the traditional English churches had ignored. Their services included home visitation, distribution of Bibles and tracts, instruction in mothering, food for the poor, reading rooms and evening classes in reading, writing and arithmetic.

Called the East London Christian Mission, it evolved into an independent quasi-church that won converts by the thousands. It was reorganized in 1878 into a hierarchal organization along military lines and renamed the Salvation Army. William Booth assumed the general superintendency and was called "general." A year later, the first Salvationists arrived in the United States, and in 1880 Booth sent a

trusted aide, F. Scott Railton, and seven women to New York City as an "invasion force" to evangelize the United States. As the movement spread through the Middle Atlantic states and Midwest, disagreement developed over the question of loyalty to the British organization. In 1884, Major Thomas E. Moore, who had replaced Railton, established the Salvation Army of America, independent of Booth's authority. In 1887, General Booth sent his son Ballington and Ballington's wife Maud to take charge of the American Army, but in 1896 they resigned and started the competitive Volunteers of America.

In 1904, General Booth's daughter Evangeline assumed command of the Army of the United States, by which time there were 741 corps and outposts across North America, with more than 2,500 officers and cadets. By 1934, when she returned to England to become commander of the worldwide Army, she had built the U.S. organization to 1,640 corps and outposts and 4,477 officers and cadets. Using open-air meetings, parades and communal singing, they promised instant salvation and a simplified theology to the poor, the unchurched, the unschooled and all those who simply took the "oath" and promised to lead a better, more Christian life. In exchange, the Army provided food, shelter, clothing, work and an enormous variety of formal and informal schooling, instruction and broad-based education that was unavailable to the poor immigrants swarming through American cities. In addition, Salvationists joined the small but growing army of secular settlement-house workers in lobbying government authorities at all levels to assume more responsibility for feeding, housing and educating the poor. The Salvation Army now numbers more than 5,000 "officers," as the clergy are called, and 450,000 "soldiers," or members who have publicly declared their beliefs in Salvation Army principles. The Army has 40,000 paid employees and 1.6 million

volunteers, and it continues to operate youth centers across the United States. It receives more charitable contributions than any other organization in the United States each year—more than \$1.3 million.

San Antonio School District v. Rodriguez A 1974 U.S. Supreme Court decision upholding the right of states to finance public school systems with local property taxes. The decision was a devastating setback for representatives of minority groups and the poor, who contended that the funding of public schools led to inequitable spending on education. Schools in wealthy districts with high property values obtained far more funding and therefore provided better education than schools in poor districts, where property values were low. The suit was filed against the state of Texas by parents in San Antonio, where property taxes provided only \$26 per pupil for schools in poor districts and \$333 per pupil in wealthy districts. The plaintiffs argued that such inequity violated the U.S. Constitution's guarantee of equal protection under the law.

The Supreme Court, however, ruled against the plaintiffs on the grounds that the Constitution makes no mention of education and offers no specific guarantee of any right to education. "Education . . . is not among the rights afforded explicit protection under our federal constitution. Nor do we find any basis for saying it is implicitly so protected." Moreover, the Court declared that "where wealth is involved the equal protection clause does not require absolute equality of precisely equal advantages." The Court also said that the plaintiffs had failed to prove that disparities in funding had deprived their children of an "opportunity to acquire minimum basic skills necessary for the full enjoyment of rights of free speech and full participation in the political process."

The irony of the decision is that it followed by three years a California State Supreme Court

decision in *SERRANO v. PRIEST* that required the state to develop a more equitable distribution of public school funds to reduce the discrepancies in quality of education between poor and rich districts. Subsequently, more than 30 states have issued similar rulings. The difference in these rulings, however, is that they are based on state constitutions that do mention education and insist on equity in education for all the state's children. The U.S. Supreme Court did not rule against equity in education. It merely said that such equity was not guaranteed by the federal constitution.

Sankey, Ira D. (1840–1908) American evangelist, hymn writer and singer whose inspiring musical offerings transformed a partnership with fellow evangelist DWIGHT L. MOODY into the most successful and influential fundamentalist Christian organization in the world in the late 19th and early 20th centuries. The charismatic Moody reached tens of thousands of converts through his preachings, prayers, publications and missions, but Sankey's church hymns and gospel songs extended their combined audience to millions. As charismatic as Moody was, Sankey's appeals to audiences to join in the singing made responders feel at one with the movement. Sankey's music turned the Moody revivals into gatherings of historic size, by adding inspiring, participatory music that excited audiences in a way that listening passively to mere words could never do.

Born to a Methodist family in western Pennsylvania, Sankey involved himself in local church affairs and Sunday-school education. He became president of a local YMCA in Pennsylvania in 1867 and introduced singing services; Moody, meanwhile, had become deeply involved in YMCA affairs in Chicago. When the two met at a YMCA convention in Indianapolis, Moody recognized that the dramatic effect of Sankey's singing on audiences represented

the missing element in his own evangelistic approach. They immediately formed a partnership that saw Sankey's catchy, repetitive tunes with simple harmonies lure huge audiences into massive responsive singing that left them easy prey to Moody's scriptural passages, anecdotes, parables and exhortations. Like Moody, Sankey had no formal theological training, but he knew instinctively how to arouse audiences through song.

The educational results of the Moody-Sankey partnership were a network of Sunday schools across the United States, a Bible Institute in Chicago, and a far-reaching Student Volunteer Movement that sent college students as missionaries across the United States and the world.

Santa Fe Independent School District v. Doe A 2000 ruling by the United States Supreme Court that student-led prayers at high school football games—and by implication other school-sponsored athletic contests, school events and extracurricular activities—are unconstitutional. The 6-3 ruling insisted that “the delivery of . . . officially sanctioned . . . pregame prayer has the improper effect of coercing those present to participate in an act of religious worship” and that “the Constitution is abridged when the state affirmatively sponsors the particular practice of prayer.” Although the school district had argued that banning student-led prayers would violate their First-Amendment rights to free speech, the Court replied, “These invocations are authorized by a government policy and take place at government sponsored school-related events. . . . Contrary to the district's repeated assertions that it has adopted a ‘hands-off’ approach to the pregame invocation, the realities of the situation clearly reveal that its policy involves both perceived and actual endorsement of religion.” The Court stopped short of banning all prayer on public school property, however, insisting that “by no

means" did its decision "impose a prohibition on all religious activity in our public schools" or prohibit "any public school student from voluntarily praying at any time before, during or after the school day." The case involved two families—one Mormon, the other Roman Catholic—who sued to stop a variety of religious practices at school and won permission to do so anonymously because they feared harassment by their largely fundamentalist Christian neighbors in the small Texas town of Santa Fe, near Galveston.

(See also CHURCH-STATE CONFLICTS; PRAYER IN SCHOOL.)

satellite schools Any of a variety of small, ancillary schools providing education to students drawn from a variety of nearby comprehensive schools. Still highly experimental, the satellite school concept can serve a variety of functions. One type of satellite school provides specialized or advanced forms of vocational or academic education that would attract too few students to be cost effective at a conventional comprehensive high school. By setting up a single facility for an entire city or region at a satellite school, the latter can serve students from all comprehensive high schools in the area. The students continue to take their core academic courses in their home schools but complete upper-level, specialized courses at the satellite school. Some cities have upwards of a half-dozen such separate specialty schools.

A second type of satellite school is designed to ease overcrowding in a public school system by establishing ancillary facilities in cooperation with new local industries whose arrival causes a sudden ballooning in the school population. A natural extension of company day-care programs, the concept began in Miami, Florida, in the 1980s, when a huge expansion of the Miami International Airport threatened existing public schools with overcrowding. To relieve the problem, the airport authority

agreed to convert an administrative building into the Miami International Airport Satellite School, where 60 children of airport workers enrolled in kindergarten and first grade classes staffed by Miami public school teachers and administrators. At least five similar satellite schools were later established, either in portable classrooms or at company-built school-houses, with the sponsoring firms paying costs of maintenance, electricity and security, while the local school system paid all other educational costs. Companies sponsoring such schools reported that absenteeism among workers with children at a satellite school dropped 30%, while job turnover declined 4%, to 5%.

save harmless A legal term referring to the indemnification that many school districts and states afford to teachers in the performance of their stated duties. Under the concept, some states are required to defend teachers against charges of negligence and pay any judgments awarded.

scale In education, a statistically graduated series of grades or scores that relates each individual's score to the scores of all others in the same group. Unlike raw scores, which might include zeros and 100 percents, a scale bases all scores on aggregate measurements, such as a mean, and compares each score to that mean rather than any absolute figure. Scales based on means and standard deviations thus convert raw scores into practical, relative scores. I.Q. and Scholastic Assessment Tests are but two of a wide variety of scales for grading various types of tests. Neither scale has a zero. Instead, 500 is arbitrarily selected as the mean of all raw scores for SAT tests, while 100 is the mean for I.Q. scores. Conversion of all raw scores to an appropriate scale thus allows them to be compared to each other and to a norm. Fifty correct answers on a SAT test of 100 questions, for example, has no broad meaning until it is con-

verted to a scale in which it can be compared to other test results. If the mean score for all test takers is 50 correct answers, then 50 would convert to 500 on the SAT scale. Depending on the number of raw scores above or below 50%, each score could convert to any level on the scale above or below the mean. Indeed, a 50/100 raw score could conceivably convert to a 200, the lowest score on the SAT scale, or an 800, the highest score, depending on how all the other raw scores place on the scale.

SCAT (School and College Ability Tests)

A battery of tests, requiring about an hour, to measure the anticipated ability of students to complete the work of the next higher middle school, high school or community college grade successfully. Published by the Educational Testing Service, different SCAT batteries are available for grades 4–6, 7–9, 10–12 and 13–14.

Schall v. Martin A significant but little known U.S. Supreme Court decision in 1984, in which the Court held it constitutional for states to hold juvenile criminal suspects in preventive detention before bringing them to trial. The case involved a New York State law that gave a judge the option of ordering a juvenile (15 years or younger) held in custody for up to 17 days if the suspect was charged with a serious crime and up to six days for a minor crime. Aimed at preventing suspects from committing additional crimes, the ruling is relatively unknown to the majority of public school teachers, who often feel they have no legal options in the face of juvenile crime in their schools and classrooms. Although lawyers for juveniles argued that young people should have the same rights to habeas corpus and bail as adults, the Court ruled that “juveniles, unlike adults, are always in some form of custody. . . . Children by definition, are not assumed to have the capacity to take care of themselves. They are assumed to be subject to the control

of their parents, and if parental control falters, the state must play its part.”

According to most polls of teachers, a large proportion fear retaliation for reporting students for criminal conduct in classrooms and school buildings, and few are aware of the Schall decision.

Schechter, Solomon (1847–1915) Romanian-born religious leader and educator whose influence spanned the Middle East, eastern and western Europe and, eventually, the United States, where he became the leader of Conservative Judaism. Educated at the Universities of Vienna and Berlin, he taught rabbinics at Cambridge University in England and became a professor of Hebrew at London University. In 1896, his archaeological excavations in Cairo uncovered an archive of some 50,000 manuscripts, including the original Hebrew text of Ecclesiasticus.

In 1902, the world-renowned scholar was asked to come to New York City to serve as president of the Jewish Theological Seminary and help revive its deteriorating fortunes. At the time, enormous tensions had developed between the recently arrived, relatively poor and ignorant Jews from eastern Europe and the totally Americanized, well-educated, prosperous German Jews. The latter had fanned out across the United States, assimilated with Christian Americans and practiced a Protestantized form of Reform Judaism. They sought to lure the European Orthodox Jews away from their old ways into the new, through organizations such as the Educational Alliance, which sought to Americanize them and bring them into the fold of Reform Judaism. The resistance was enormous, and a group of conciliatory German Jews established Conservative Judaism as a compromise theology that would eschew the use of the English language in services and adhere instead to a modernized practice of Orthodoxy.

Although the Jewish Theological Seminary had been established in 1886, it had met with little success. Seeking peace among the Jews, however, a group of wealthy Reform Jews—Jacob Schiff, Daniel and Simon Guggenheim, Leonard Lewisohn, among them—raised a half-million dollars to restore the seminary and lure the scholar Schechter to New York to head it. A brilliant scholar and mediator, he not only recruited an equally brilliant faculty, he was also able to mediate between the Orthodox and Reform communities. Located at the edge of the COLUMBIA University campus, the seminary, under Schechter's leadership, immediately established links with Teachers College at Columbia University, thus allowing rabbinical students to study the new progressive pedagogies of JOHN DEWEY and WILLIAM HEARD KILPATRICK.

Schechter never achieved his original goal of uniting all American Jews into a single movement, but he did manage to create a strong bridge between the Orthodox and the Reform movement that has permitted generations of American Jews to shift their views and religious practices, according to their spiritual needs at the time—much as many Protestants often shift from one sect to another, according to their particular needs.

Schechter's work reached far beyond the Jewish Theological Seminary, which remains the most important Conservative rabbinical and cantorial school in the world. In 1913, he founded the United Synagogue of America, which is the central Conservative synagogue in the United States. By the 1970s, the synagogue had grown to more than 800 congregations, each with Sunday and day schools. Schechter was also editor of the first edition of the *Jewish Encyclopaedia* in 1901, editor of the *Jewish Quarterly Review* and author of numerous books on Judaism.

schedules of reinforcement An instructional plan that includes the regular review of

previous learning. Reinforcement schedules may be rigid or not, according to the teacher's own approach to reinforcement. Usually, the simplest form of reinforcement begins with the words, "Remember when we talked about X (this morning, yesterday, last week)? What did we say about it?" Fixed-time reinforcement, usually a fixture of mathematics training, calls for a schedule of reinforcement after a specific amount of time has elapsed. Variable-time reinforcement schedules are usually based on a teacher's instinctive skills in selecting appropriate times to relate current materials to materials taught earlier. "Surprise" quizzes are often used as a form of variable-time reinforcement.

schema theory The belief that the brain organizes all thoughts and experiences in a highly codified way and that all new experiences and learning are absorbed to the extent that they can find an appropriate fit into the student's existing schema. It is the student's schema that permits comprehension and absorption of all new reading material. Without any experience or knowledge with which to relate to a body of reading, the reader would literally see and absorb nothing. To see, for example, t^g@l on a printed page produces no understanding unless an instructor can tie each symbol and the total expression to experiences and concepts that form part of the reader's schema. Relating new symbols, words and concepts to children's schema lies at the heart of the complex process of teaching developing children.

Scholar of the House (1) An honorary designation awarded at some colleges and universities to that undergraduate or graduate student who has achieved the highest levels of academic achievement among his or her colleagues during the previous academic year or other designated period. Depending on the institution, the designation may carry a sti-

pend. (2) An honorary title for a faculty member of renowned scholarship or a similar fellow at a particular residential college or graduate school.

scholarship A word with several meanings, the most common being FINANCIAL AID in the form of a monetary award to a student, originally granted for exceptionally high academic achievement. Scholarships vary from symbolic stipends to full costs of tuition and are usually granted on the basis of merit. In recent years, however, the “purity” of scholarships in higher education has been sullied by intensified competition among many colleges for top scholars. Used as a lure, scholarships often no longer reflect the actual academic merit of scholar recipients. Moreover, many colleges now routinely award scholarships for achievements outside the realm of academics, such as athletics. Numerous reference books list the tens of thousands of scholarships awarded. American colleges and universities—independent of outside sources—award about \$14.5 billion a year in scholarships and fellowships, or about 4.6% of their total annual expenditures of nearly \$320 billion. About half are awarded on the basis of academic, artistic or athletic ability and half on the basis of financial need.

A second meaning for the word *scholarship* is simply the demonstration of academic prowess—that is, to exhibit scholarship or knowledge.

Scholastic Aptitude Tests An obsolete term for a battery of college entrance examinations that was reformulated in 1993 and renamed SCHOLASTIC ASSESSMENT TESTS. The Scholastic Aptitude Tests consisted of two parts: the SATs and the Achievement Tests. The SATs (now called the SAT I) measured verbal and mathematical skills, while the Achievement Tests (now called the SAT IIs) were made up of one-hour examinations on specific high school subjects.

Scholastic Assessment Tests (SATs) A battery of tests designed to determine a high school student’s ability to do college work. Scholastic Assessment Tests are divided into two parts: SAT I and SAT II. Once called the SCHOLASTIC APTITUDE TEST, the 3-hour, 45-minute SAT I consists of three parts: critical reading, mathematical reasoning and writing. The 90-minute critical reading section consists of readings with several layers of meaning that measure a student’s vocabulary and verbal aptitude as well as his or her ability to interpret and reason logically. The 90-minute mathematical section measures the student’s ability to reason with numbers and mathematical concepts. The use of calculators is permitted. The 45-minute writing part of SAT I allows students 25 minutes to write an essay and then tests knowledge of English usage by asking students to identify errors in a series of sentences and to improve sentences and paragraphs. Scoring is on a scale of 200 to 800 points in each of the three parts and a combined, total score that can range from 600 to 2400.

Although tests are normally scored electronically, students can insist on manual scoring by paying fees ranging as high as \$100. A spate of serious calculator-induced scanning and scoring errors affected the test results and, ultimately, college-admission results of more than 5,000 students in 2005, and many secondary schools now advise students to pay for the extra service. The scoring errors were serious enough to convince many colleges to make SAT testing an optional element of their admissions processes. Indeed, SATs are now optional at more than one-fourth of the top 100 in the *U.S. News and World Report* rankings. The tests are usually given on seven Saturdays during the year, once each in January, March (or April), May, June, October, November, and December, and students may take them more than once.

The SAT IIs test a student’s academic knowledge of specific subjects. Formerly known

as ACHIEVEMENT TESTS, they last one hour each and consist of multiple-choice questions. Specific subject tests are available for various levels or types of writing, literature, history (United States and world), mathematics (two levels), the sciences (biology, chemistry and physics) and foreign languages (Chinese, French, German, Hebrew, Italian, Japanese, Korean, Latin and Spanish).

Not all colleges require SAT IIs, but most of those that do use them not only to determine whether to accept the student but also at what level to place the student in each subject. At some colleges and universities, a high score in a particular subject may exempt the student from the freshman requirement in that subject and allow enrollment at a higher level. A very high score might even exempt the student from the entire college requirement in that subject. Special nonstandard accommodations for taking SATs are available to students with documented visual, hearing, physical or learning disabilities (special registration instructions are available on the college board's Web site). Each SAT II test is scored on a scale of 200 to 800.

SATs were originated in 1926 by the COLLEGE ENTRANCE EXAMINATION BOARD, a non-profit organization of 2,400 four-year colleges, founded in 1900 to establish common standards of higher education and common qualification standards for admission. The association's consensus on these standards forced American high schools to adopt a common core curriculum of English, mathematics, science, social studies and foreign languages for their students to be able to attend these colleges.

In scoring each SAT test, 500 is an absolute mean, or average, which is adjusted each year to reflect the distribution of student scores rather than the number of correct and incorrect answers on the test. In any given year, the average score in the nation—500—might

indeed reflect a 50% raw score, but another year might see students obtain the average score of 500 by answering only 45% of the questions correctly; in yet another year, it might reflect a 55% raw score. The raw score remains immaterial. Students who score the average number of correct answers on the test for that year receive a 500.

The new scoring was designed to remove the SATs from the center of ongoing controversy over educational quality in American public schools. Over the 25 years from 1967 to 1992, the average SAT scores of college-bound U.S. seniors dropped 42 points, or 9%, on the verbal SAT and 14 points, or 2.8%, on the mathematics SAT. Leading critics of American education argue that the decline in SAT scores reflects a corresponding decline in the educational quality of American public schools.

The drop, however, may have been less a reflection of educational quality than a reflection of the size and makeup of the pool of college-bound students taking the SATs. In the decade from 1980 to 1990, the number of students taking the SATs climbed 5% to more than 1 million. In 1972, whites made up 87% of that pool. By 1991, however, they made up only 72%, while minority groups, some of whom have less developed English language skills—one-third of them were Hispanic and another one-third of them were Asian—made up 28%. Since 1990, verbal scores have edged up only slightly—about 1.6%—while math scores have improved somewhat more, 4%.

Ironically, many academically selective colleges—especially those in the Northeast—originally adopted the SATs to replace social status and family background with academic merit as the primary gauge for admissions. This process ultimately created an intellectual elite to replace the social elite that had made up the majority of the student bodies at such colleges. Many critics of the SATs, however, allege that many questions are replete with a cultural bias

and a gender bias that are reflected in consistently lower scores among AFRICAN AMERICANS and HISPANICS and women of all racial and ethnic backgrounds. College Board officials insist that the lower scores are the result not of cultural bias but of lower-quality primary and secondary school education in schools serving African Americans and Hispanics. The College Board has been at a loss, however, to explain the consistently lower average scores of girls, who just as consistently obtain higher grade-point averages than boys in both high school and college.

In a concession to critics, the College Board redesigned the Scholastic Aptitude Tests in 1994 and again in 2003, at which point they were renamed the Scholastic Assessment Tests. The new tests replaced some of the multiple-choice questions—which had made up 100% of the old tests—with questions requiring greater analytical ability. In the mathematics sections, for example, approximately 20% of the questions on the new test were open-ended, requiring students to calculate their answers from scratch, rather than guessing from a group of choices provided by the test. Similarly, the verbal test presented longer reading passages and more questions aimed at measuring comprehension of themes rather than recognition of simple facts. The 2003 changes added the essay-writing section to the SAT I and continued to shift the emphasis to critical analysis.

The endless changes in SAT questions and scoring have done little to alter the striking differences in scores between men and women and between racial and ethnic groups. These differences have, in many cases, proved of very little value in predicting ultimate college academic performance—the stated purpose of the tests. This lack of correlation between test scores and performance, in addition to questions about scoring accuracy mentioned above, has caused many American colleges

and universities to either abandon or lower the weight given to SAT scores as a factor in deciding whether to admit or reject college applicants.

Men score nearly 1.6% higher in verbal SATs than women and 7.2% higher in math, yet year after year, women consistently earn college grade point averages between 5% and 15% higher than men, thus contradicting the claims that SAT scores accurately predict college academic achievement.

The scoring differences among racial groups are even more striking, although they tend to correlate more closely with college academic performance than gender-based scoring differences do. White students score nearly 23% higher on verbal SATs than blacks, nearly 16% higher than Hispanics, about 9% higher than American Indians and about 4% higher than Asian Americans. White students score 24.4% higher than blacks on the math SATs, 16% higher than Hispanics, nearly 9% higher than American Indians but 8% lower than Asian Americans.

school An institution or a group of scholars that provides instruction. The ultimate root of the word *school* is the Greek word *schole*, meaning leisure. In ancient Greece, as in the United States until passage of compulsory education laws, education—most especially secondary and higher education—was largely reserved for young men whose families were wealthy enough to afford their sons the leisure of attending school. However, the more modern connotation of the word *school* is derived from the Latin *schola*, meaning discussion or lecture. The English word has two meanings: (1) any institution organized to educate children (minors, as opposed to college-aged students), and (2) a group of thinkers or philosophers dedicated to promoting a specific point of view, way of thinking or philosophy, as in a school of thought.

Schools of thought date back to ancient Greece and the various approaches to thinking about and interpreting the world (see SOCRATES, PLATO and ARISTOTLE). Subsequent schools of thought have emerged with philosophers, scientists, authors, poets, historians, artists, statesmen and religious or social leaders who have presented points of view or interpretations of the world around them that differed in part or in substance from the ideas of their predecessors.

The school as a formal instructional institution of bricks and mortar first emerged in the English-speaking world with the arrival in England of the Roman missionary Saint Augustine in 597. Supported by King Ethelbert, Augustine and his monks established themselves at Canterbury. Intent on converting the English to Christianity, he and his monks fanned out across southern England, scoring huge successes they had not anticipated. The Augustinians soon needed help from a native clergy fluent in Latin thoroughly familiar with Christian literature and grounded in Catholic liturgy. To educate such clergy required schools. Within 200 years, the Augustinians had established schools at their diocesan seats. By the end of the medieval period, there were schools at every church, monastery, hospital and charitable institutions.

By the end of the 12th century, the first universities had evolved to train and provide England with a highly educated native clergy. The lower-level schools largely became geared to preparing children for eventual entry into university and the clergy. Regardless of their ultimate intent, however, all the lowest-level "petty" schools began with systematic instruction in reading, writing and arithmetic, along with study of the arts and languages. Some were more religious in character than others and prepared children for service in choirs and as altar boys, teaching them "to say, to sing and to read." Others were more secular and sent most of their children into the world

of work as apprentices. Between petty school and university, a secondary "grammar" school provided the educational bridge to collegiate scholarship. When the first English settlers arrived in the American colonies, they brought their three-part system of schooling with them. Its development into a purely American system of education is detailed in the article EDUCATION.

school audit An ill-defined measure of school performance, aimed at making schools more accountable for the academic achievements and failures of students. Somewhat akin to ACCREDITATION, it differs in its focus on student performance as a measure of the quality of teaching methods and school administration. Whereas accreditation is based on the degree to which a school achieves its stated goals, school audits compare student academic performance at a school with that of previous students and with students elsewhere in the school district, the state and the nation. Any deficiencies are then traced to their sources, at the district level, the individual school or the classroom, to determine whether the fault lies in the curriculum, the school's administrative leadership or the instructional methods of individual teachers. A school audit presumes that students in each grade should be performing at least as well as the national average for students in the same grade.

In addition to relying on standardized tests, school audits may survey students, teachers and administrators to obtain a clearer picture of the sources of any deficiencies. Thus, one nationwide survey of students by the U.S. Department of Education in 1990 found that only 61% of eleventh graders reported that their teachers routinely marked errors on written papers, and only 31% said their teachers routinely pointed out what was well done. The survey found that only 28% of the same eleventh graders were capable of writing an ade-

quate letter to a senator supporting a position on the space program.

Depending on the individual district or state, school audits may include school-by-school comparisons of dropout rates, student attendance, achievement test results, percentage of students who go on to college and SCHOLASTIC ASSESSMENT TEST scores. Such audits, however, tend to ignore nonschool factors that can affect school performance—namely, the social and economic differences of student families and of the surrounding neighborhood. Income, occupation and education of students' parents, and family stability all have a strong bearing on Scholastic Assessment Test scores, for example. A College Board study in the 1990s found that students from the poorest families, with incomes under \$10,000 a year, scored about 120 points lower than students from families with incomes over \$70,000. In recent years, as a result, school audits in some areas have taken family income of students into account in assessing school performance. Pioneered in New York City and South Carolina, such "school performance scales" have been the target of critics who maintain that factoring student family income into school audits automatically lowers academic standards and expectations for poor students, forming the basis for a self-fulfilling prophecy. The historic goal of American common schools, say critics of such school audits, is to overcome the strong relationship between a child's ancestral economic status and that child's ability. The lowering of academic standards in school audits obscures that goal.

school-based management A system of school administration that places all functional responsibilities—education, curriculum selection and design, teaching methods, textbook and equipment selection, discipline, purchasing, business management, etc.—on school administrators, staff and teachers. School-based

management minimizes and often obviates the need for a central board of education and limits the duties of the school superintendent and school board to broad policy determinations and fund raising. Once a policy has been established, the school board's work is limited to hiring the best agents—superintendents and school principals—it can afford to implement that policy.

U.S. Department of Education studies have demonstrated that school districts with the strongest schools academically hire the best professional educators they can find and give them complete autonomy to run schools free of interference from nonprofessionals—local politicians, school board members and parents. "The most successful public schools," said one department study in 1990, "all give teachers a great deal of autonomy in doing their work." Such autonomy, in turn, "produces respect, dignity, deference and esteem . . . [from] colleagues, students and community members." The study found that students invariably function better academically when they know their teachers have authority.

Teachers, in turn, function better when they participate in decisions that affect their work. In general, school-based management allows teachers to design their own courses, select their own textbooks and teaching materials, and teach them in the ways they consider best. Educators agree that decisions regarding a youngster's education should be made by those who know the youngster best and can tailor decisions to individual needs—i.e., the teacher or teachers who work with that youngster six hours a day, five days a week, 35 weeks a year. Although the principal in each school has the ultimate authority, teacher authority over student behavior and student retention or promotion is a mark of well-run schools offering high-quality education. Twenty-one state governments, however, dictate the choice of textbooks for all teachers in all grades in those

states. Some even impose lesson plans on teachers. Few school boards give teachers the authority to retain or promote students or impose direct discipline.

School-based management has long been the standard approach in almost all academically selective, private boarding schools and many private day schools, where boards of trustees leave education to professional educators and concern themselves with fiscal matters. Often viewed as an approach to reform in public school systems, school-based management has won little favor among parents and the general public, who have long believed they have a right to determine what is taught in schools and are unwilling to cede that right to teachers.

school board An alternative title for board of education; an elected body of school district residents charged with ultimate responsibility for all school operations within the district.

school bond A public or private loan obtained by a school district to pay for capital expenditures over 5, 10, 20 or 30 years, or other extended period. With property taxes only barely covering the costs of current school expenditures, most school districts have little choice but to float bonds and borrow money from the public or from private sources when they require capital sums to build new buildings or renovate existing facilities. Bonds are issued in minimum denominations of either \$1,000 or \$5,000 and pay tax-free interest quarterly or semiannually. Most are sold to the general public through local banks. Like all bonds, school bonds are rated by credit-rating agencies who label the bonds AAA (prime), AA (high grade), A (upper medium grade), BBB (medium investment grade), BB (lower medium grade), B (speculative), CCC and CC (highly speculative). Interest rates paid on such issues climb according to the degree of risk:

The higher the risk, the higher the interest rate. C, DDD and DD ratings indicate degrees of default, with the school district temporarily unable to pay interest on its debts.

Most school bond issues in middle- and upper-income districts are rated quite highly because they are backed by the local property owners and, indirectly, by the state. Poor districts are usually unable to obtain approval to float such issues and are, therefore, heavily dependent on state government for capital funds.

school-business partnerships Any of a wide variety of formal or semiformal relationships between a company and its employees and one or more nearby schools and their teachers and students. Although many companies had been helping students and nearby schools for more than a century, the school-business partnership did not grow into a national movement until Labor Secretary Willard Wirtz berated American industry in a speech at the National Manpower Institute in 1975. Wirtz castigated industry for constantly harping about the declining quality of education while conspicuously refusing to get involved. "Although business leaders have a stake in education," he said, "in no sense do they become full partners in the joint enterprise. . . . Virtually every community in the country has an untapped reservoir of personnel and information. What is lacking is the requisite collaborative process."

Wirtz triggered a nationwide movement that saw major companies contribute funds and services to various public school educational programs. By 2000, direct corporate financial contributions to public schools reached about \$8 billion. The school-business partnership movement spread into more than 100 cities in 42 states, building bridges between industry and schools. The almost endless varieties of relationships include the following:

- **ADOPT-A-SCHOOL PROGRAMS** in which a large company underwrites projects at a school, endowing teaching chairs or funding specific purchases of capital equipment such as computers.
- Helping disadvantaged students and preventing dropouts by sending qualified employees to donate their time as tutors, mentors or counselors.
- Establishing enrichment programs for the gifted, sending highly qualified personnel into schools as volunteer teachers and inviting gifted students to corporation facilities for scientific or technological training.
- Helping teachers by offering advanced courses and training in mathematics, science, technology, computers and other areas and by providing grants to teachers for advanced study in nearby colleges and universities.
- Preparing students for the workplace with cooperative education programs, with students spending a half-day in school and the rest of the day at in-plant, worker-training programs.
- Training school administrators in management and leadership techniques. In 1992, 80 firms sent teams of executives to more than 200 schools, resulting in an average savings of \$100,000 a year in each school district since the visits.

school calendar An adaptation of the traditional yearly calendar to include the dates of all pertinent events at an individual school or school district. Published annually before the beginning of the school year in August or September, a typical school calendar would include the school's opening and closing dates, school holidays, vacation dates, dates of board meetings, teacher conferences, PTA meetings, parents' days, athletic events, school plays and community events that might affect school activities. At the beginning of the 1990s, the typical American school year averaged about 180 days—a target of school critics because it is the shortest school year in most of the industrialized world. The average school year at four-year colleges was only 156 days. In contrast,

the Japanese school year lasts 243 days; the German, 226 to 240, depending on the province; the South Korean, 220; the Israeli, 216; the Russian, 211; the English, 192. Spain and Sweden, like the United States, have 180-day school years.

The relatively short length of the American school calendar and the school day itself has been the subject of criticism for some time. In 1994, a National Education Commission on Time and Learning, created by Congress, called for a longer school year and a longer school day. Its report called for a school year of 220 days, with children devoting at least 5 1/2 hours a day to core academic subjects, instead of the three hours they now spend. The commission found that gym classes, pep rallies and sessions on topics such as personal safety and AIDS now absorb as much as 60% of the school day. By 2000, about 2,250 schools in 29 states—about 4% of the nation's schools—had converted to year-round schooling, with 20 to 30 additional days, and vacations never lasting more than four weeks but staggered regularly throughout the year. About 7% of the schools that tried year-round schooling eventually abandoned it.

Supporters of year-round schooling maintain that shorter summer vacations help students retain more from year to year and provide more flexibility for extra tutoring, field trips and other academic enhancements. In addition, more frequent breaks help prevent both teacher and student burnout, and schools get fuller utilization of their buildings. Opponents say year-round schooling actually costs more, necessitating the operation and sometimes installation of air-conditioning. Critics argue that family chaos can result for siblings of different ages with different schedules. Year-round schooling can also disrupt plans of students who want to participate in seasonal sports or other extracurricular activities. In addition, shortened vacations prevent many teachers from updating their own studies.

school census A count of all school-age and preschool-age children residing within a specific school district. Usually conducted at the end of each school year and during the summer by volunteers in smaller communities and by paid enumerators in large cities, a school census is essential to school budgetary and personnel planning. The school census provides data on student population increases and decreases as well as shifts from one area of the district to another. Essential for establishing school bus transportation routes, the census is also necessary for enforcement of compulsory education laws.

school choice The right of parents to select whatever elementary or secondary school they prefer their child to attend and to transfer the public moneys allocated for the child's current education to the school of choice. A reversal of traditional state and local authority to assign children to specific schools, school choice began as one of many proposed reforms to improve public school education in the 1980s. It quickly grew into one of the most controversial legal, as well as academic, issues in American education. Adopted or proposed by more than 25 states by the early 1990s, the goal of school proponents was to introduce capitalistic competition into public school systems by allowing consumer-parents to select the best schools for their tax dollars and leave schools with poor-quality education with the choice of either improving or closing. Opponents of school choice countered that only the most aggressively concerned parents (often the wealthiest, best educated) would take advantage of school choice, leaving children from the poorest, most dysfunctional families—the children who most need education—in the worst schools with the lowest-quality education. There was some truth to both arguments, depending on the type of school choice and the community that adopted it.

There is a wide variety of school choice, of which the three most basic are intra-district school choice, inter-district school choice and extra-system, or parochial/private, school choice. Intra-district school choice allows children to attend any public school within the school district where they live—but nowhere else—at public expense, including costs of transportation to and from school. In effect, intra-district school choice limits choices to elementary and middle schools in most areas of the country—indeed, almost all rural areas—because most districts are served by a single, comprehensive central HIGH SCHOOL.

Inter-district choice permits students to attend any public school in or out of their home district (within state lines), although not necessarily entirely at public expense. Under inter-district choice, the total amount of tax dollars allocated for the child's education in, and public transportation to, the home-district school is simply transferred to the district school the child plans to attend. The parents usually must bear all additional costs.

Extra-system choice, in which the child is transferred to a private or parochial school, operates in much the same way as inter-district choice; parents are issued SCHOOL VOUCHERS equal to the tax dollars that would have been spent on the child's education in and transportation to the home-district public school. The vouchers may be used toward paying the costs of private or parochial school.

One irony of the school-choice debate is that all varieties of school choice have been legally available to every American family since 1954. Unfortunately, wealthy or aggressively involved parents have usually taken the most advantage of school choice. Obviously, any American family is legally (though not necessarily financially) free to relocate to any school district it believes offers its children the highest-quality education. Indeed, one of the motivating thrusts of the mass migration from cities

to suburbs in the decades following World War II was the quest for better schools in the suburbs. Any family is just as legally free to transfer its children from the public school system to any state-accredited private or religious school or to educate its children at home. Indeed, nearly 22.5% of American schools are private, and 11.5% of American children attend them. In addition, between 1 million to 1.5 million students, or more than 2% of the student population, are educated at home. Furthermore, even the poorest children are eligible for free education at (and transportation to) public "MAGNET" SCHOOLS for students gifted in the arts, sciences, mathematics and other academic areas, as well as at public CHARTER SCHOOLS, which operate independently of local school boards.

Most children are excluded from these options for a wide variety of reasons, including economic status, less-than-gifted intelligence and distance from better schools. Proponents of school choice insist it would give the poor and the average the same freedom now enjoyed by the wealthy to select the best schools for their children. Over the long term, say school-choice proponents, poor-quality schools will be forced to improve dramatically or face a total exodus of students and eventual extinction, with consequent loss of jobs for the very teachers and administrators who allowed their schools to decline. School choice, in other words, would result in an evolutionary "cleansing" process after which only the fittest public schools, teachers and administrators would survive—and that indeed is exactly what has happened in a handful of free-choice areas.

In one New York City slum, 1,000 students transferred out of the poor-quality public schools in the district after free choice was instituted. Facing loss of state funds, the district immediately began rebuilding its system, adding magnet schools and innovative instructional programs that have reversed the exodus.

Another, similar district has won back 6,000 of the 8,000 students it lost to private schools under free choice. Similarly, in Cambridge, Massachusetts, the percentage of students switching from public to private schools dropped from 30%, when free choice first went into effect, to 10%, after the public schools responded to the exodus with educational improvements.

But school choice in other areas of the United States, including Minnesota, which pioneered statewide school choice, produced little or no general improvement in educational quality or student achievement—at considerable extra cost. Indeed, one study by the Carnegie Foundation for the Advancement of Teaching found that, while "choice" students moved up from the 30th to 34th percentile in national reading tests, they fell from the 33rd to the 30th percentile in math, leaving them approximately where they started before moving to better public or private schools. In those districts where student achievement had improved following institution of school choice—New York's Harlem and Cambridge, Massachusetts, for example—the programs that produced such improvements were largely the result of huge infusions of federal funding for innovative educational experiments. Those funds are not generally available to the vast majority of schools.

Even more disturbing, the report seemed to bear out most arguments of school-choice opponents. In the first place, school choice had little general, public support. Indeed, 62% of parents polled opposed it, and only 32% supported it. In the 1990s, voters turned down school choice in a referendum in California, where school choice seemed to have had the most popular support. Many supporters there and elsewhere in the United States, it turned out, were middle-income parents struggling to send their children to religious schools and eager to pay for that education with VOUCHERS

for funds they were already paying in local taxes for public schools. Most suburban parents with children in public schools opposed school choice. Although many parents classed as “urban poor” supported school choice, few took advantage of it. In the 13 states that had approved school choice at the time of the report, fewer than 3% of students actually took advantage of it. Moreover, most of the parents who had opted for school choice had done so for nonacademic reasons, such as safety, convenience to the parent’s place of work and sports programs. In Minnesota, where only 1.8% of students took advantage of school choice, only 16% of parents cited academic reasons for the decision to change schools. Most of those who took advantage of school choice were white and came from better educated, higher economic groups, thus confirming fears of school-choice opponents that academically laggard children of color from troubled or poor families were most likely to remain in the worst schools. Making that eventuality a near-certainty in most school-choice areas was the freedom of schools to reject or accept out-of-district applicants on the basis of academic qualifications or, as in most cases, space limitations.

Moreover, the report found that school choice not only left the worst schools with less funding and, therefore, less able to improve educational quality, it also added to the overall cost of public education by adding to expenditures on transportation to carry children out of their school districts. State funding of local schools is based on student enrollment, and any loss of enrollment reduces school income. The Carnegie Foundation report cited the case of Brockton, Massachusetts, which lost 135 students—and \$1 million in state aid—to nearby Avon. Brockton had to lay off teachers and squeeze 40 students into each classroom.

Opponents of school choice argue that it will perpetuate a two-tier system of public edu-

cation in the United States, based on the economy of the particular school district. Funds spent on transferring students from poor to better schools, say school-choice opponents, would be better spent improving education in the poor schools and allowing students to go to school near their homes.

Ironically, political leaders across the nation tend to ignore such findings and continue to push for legislation expanding school choice—even when none exists. Adding momentum to such legislation was passage of the NO CHILD LEFT BEHIND ACT OF 2001 (NCLB), which imposed testing requirements on public school districts in all states and requires every school to demonstrate year-to-year improvements in academic performance—or face loss of federal subsidies. Aimed especially at schools with disadvantaged children, NCLB allows parents in failing public schools to transfer their children to other schools or charter schools and obliges the former school district to provide grants, or school vouchers, of \$500 to \$1,000 per child to cover the costs of attending the new school. By transferring their lowest achievers out of their districts, many once-failing schools can raise academic performances and qualify for larger federal government education grants. Minnesota proposed giving \$4 million worth of tax credits to corporations willing to provide scholarships to private schools to accept 1,500 low-income students transferring out of low-rated public schools. Ohio proposed a program that would offer \$3,500 scholarships for a similar program. Arizona, Indiana, Missouri, Ohio, South Carolina, Texas, Utah and Wisconsin all developed similar school-choice plans, but the plans failed to win approval in all but Ohio and Utah.

school-college partnership programs

Any of several thousand formal or informal arrangements in which colleges, elementary and secondary schools and their respective fac-

ulties collaborate to enhance the education of elementary and secondary school students. From fewer than 10 in 1970, the number of partnerships had grown to more than 2,500 by 2000, with much of the growth spurred by school-reform reports such as *A NATION AT RISK* in the early 1980s. Found in every state, each partnership, or articulation program, targets a grade level, with some targeting more than one. About half the programs are designed for high schools, about 28.5% for middle schools and almost 22% for elementary schools.

About two-thirds of the participating colleges are public and one-third private. Although many colleges began their programs to spur public school educational reforms, many other motives contributed to the growth of the partnership movement. One was to halt the decline in college enrollments in the 1980s by providing high school students with stimulating college-level programs that would encourage them to continue their education beyond high school. Another was to improve high school teaching to better prepare students for college-level work. At the time, many students entered college so ill-prepared that colleges found themselves introducing remedial reading and mathematics programs and preparatory, high school-level courses in languages, sciences and the arts. And still another motive for cooperative education was to halt the frightening, accelerating school dropout rates among minority "at-risk" students who would constitute the majority of the population in some states by the end of the 20th century.

There are four basic types of partnership, almost all of which overlap to some degree: programs and services for students; programs and services for educators; coordination, development and assessment of curriculum instruction and programs to mobilize, direct and promote sharing of educational resources.

1. Programs and services for students. There are four categories of programs for students:

- a. Early-intervention programs for "under-represented" and "at-risk" students, usually sixth-through-ninth graders but sometimes younger children. Most involve tutoring, mentoring and encouraging interest in education through hands-on activities and field trips. Many offer the promise of college scholarships.
 - b. College courses for high school students who have finished the standard high school curriculum. Courses are offered either at high school or at nearby college.
 - c. Enrichment and gifted-and-talented programs at elementary, middle and high schools, at colleges or at summer institutes. Among the most prominent college programs for gifted youngsters is the JOHNS HOPKINS UNIVERSITY Center for the Advancement of Academically Talented Youth.
 - d. Middle and early colleges. A relatively new type of institution for high school students ready for college-level work. Most integrate high school and college courses into a seven-year program taught by a faculty of specially trained high school and college instructors in classes at the two institutions. Simon's Rock of Bard College, Great Barrington, Massachusetts, is the only freestanding middle college for high school students. Most matriculate after tenth or eleventh grade.
2. Programs and services to improve the skills of teachers in the elementary, middle and high schools.
 3. Development of new curricula and teaching and testing materials. Among the most notable outcomes of this type of program were the tech-prep, two-plus-two and coordinated VOCATIONAL AND TECHNICAL EDUCATION programs that combined the last two years of high school vocational education and community college technical training into a single, four-year program leading to an associate degree.
 4. Programs to promote sharing of educational resources. One result has been the development of new magnet schools that can use college science laboratories and other facilities that would be too costly to build.

(See also EARLY COLLEGE; PROJECT ADVANCE.)

school colors The specific hue or combination of hues used to identify a particular school, college or university. School colors date back to the formation of the first schools, colleges and universities of the Middle Ages, when almost all were associated either with the church, with a noble or royal sponsor or with a specific merchant guild or trade, and therefore bore the colors of their sponsors. Of little significance in most countries of the world, school colors, often selected arbitrarily, grew in importance in the United States as secondary schools and colleges began fielding athletic teams, whose uniforms and, later, pennants sported identifying colors.

school design The external and internal architecture of educational institutions. The product of specialists, school design is determined by a variety of often conflicting goals, each of which is determined by the needs and philosophies of various constituencies. A school must not only meet the needs of its users—students, teachers and administrators—it must also satisfy the tastes of the community that commissions it. Exterior design must, therefore, conform to community standards and be pleasing aesthetically, while providing a large enough shell in which to house the facilities required by school administrators and teachers. Underconstruction, based on failure to predict future school population accurately, can often force communities to spend unnecessarily large sums building additions or new schools or using unsightly PORTABLE CLASSROOMS.

Even more than exterior design, interior design must fulfill the needs of a variety of conflicting constituencies—namely, students, teachers, administrators, school boards and taxpayers—while fulfilling the overriding goal of all: educating children. Childless taxpayers might, for example, opt for the least costly, most austere school design with as many stu-

dents packed into classrooms as humanely possible, while some students might be more concerned with inclusion of recreation facilities such as swimming pools and tennis courts. Administrators invariably demand adequate office space, and teachers seek teachers' lounges and, if possible, individual offices. Science teachers press for lavish laboratories; mathematics teachers for individual computers; language teachers for language laboratories; coaches for athletic facilities and other faculty for specially equipped art rooms, music rooms and theaters.

In resolving the various conflicts, school designers must keep two overriding concerns in mind. One is the purpose or, in architectural terminology, the program of the building—to educate children as efficiently as possible and to permit smooth flow of student traffic from class to class in the minimum time. At the same time, they must confront the appalling reality that all the costly facilities of the school will lie empty and unused for an average of 185 full days each year and 17 hours a day of the remaining 180 days of the year, when school is in session. In other words, whatever the designer includes in the final structure may lie idle 85% of the year. From the standpoint of cost effectiveness, it becomes even more essential that school design maximize educational effectiveness during the 15% of the time in which the school is in use.

Although all constituents of the school community agree in principle that school design should permit construction of the best possible school at the lowest cost, the definition of "best" differs widely from one constituency to the next. Choice of materials alone can produce enormous variations in near-term capital costs and long-term spending on heat, lighting, soundproofing and security. In general, interior design must provide adequate classroom and laboratory space for each student—usually about 30 square feet—and pas-

sageway space to permit students to move relatively quickly from activity to activity. Student traffic determines the size of principal and secondary passageways and stairways. Aesthetics and teaching philosophy also enter into interior design. Large windows, for example, allow more light in the classrooms but also produce avenues of distraction for students. Large, open teaching spaces divided by movable partitions are less costly, but elevated noise levels can often interfere with the teaching and learning process. Modern school design tends to leave classroom layout as flexible as possible. Depending on school philosophy and individual teacher preferences and abilities, some classrooms may contain traditional rows of individual desks to encourage classroom discipline. Other classrooms may simply contain long seminar tables for teachers who are able to control the freer give-and-take of group discussions.

Making modern design more complex is the legal necessity of making schools barrier-free to permit access to physically handicapped students, teachers and staff members. In budget-constrained communities, the added cost of ramps and elevators can often preclude special facilities for arts, music, drama and other programs often considered inessential to the typical school program. In 2000, the average cost of school construction reached \$20,000 per student.

school directories Any of a wide variety of bound compilations of information about educational institutions. Available in many bookstores and libraries, school directories cover the entire range of institutions: public schools at all grade levels, private and parochial schools, community colleges, four-year colleges, universities, graduate schools and nontraditional schools and colleges. Most provide complete descriptions of each institution's facilities, along with requirements for admis-

sion, academic ranking, and all other pertinent information.

(See also PETERSON'S; BARRON'S EDUCATIONAL SERIES, INC.)

school district The most basic, local administrative unit in public elementary and secondary education, with all schools governed by a single school board and under the ultimate administrative jurisdiction of a single school superintendent. Depending on the state, a school district may also be an independent fiscal unit, with its own budget, responsible for annual public disclosure of its finances. It may also have tax-levying authority and the authority to borrow independently. In an effort to promote fiscal and administrative efficiency, most states reduced and consolidated the number of school districts as much as possible during the latter half of the 20th century—from more than 100,000 in the 1930s and 1940s to less than 15,000 by 2000.

School District of Abington Township v. Schempp A 1963 U.S. Supreme Court decision making prayers and Bible readings in public schools unconstitutional, even when unwilling students were excused from such classes. The Court said that in holding such prayers and readings, the Abington (Pennsylvania) School District had violated the ESTABLISHMENT CLAUSE of the FIRST AMENDMENT TO THE CONSTITUTION, which states, "Congress shall make no law respecting an establishment of religion or prohibiting the free exercise thereof." The clause has been the rationale for every Supreme Court decision enforcing the concept of complete separation of church and state, including any arm of the state, such as public schools. The Abington decision was a reaffirmation of a decision in *ENGEL V. VITALE* a year earlier, when the High Court declared a New York State law unconstitutional because it gave

public school officials the option to mandate a daily prayer in school.

School District of the City of Grand Rapids v. Ball A 1985 U.S. Supreme Court decision that declared it unconstitutional to pay public school teachers from public funds to teach special programs in religious schools—even when the programs, such as remedial reading, were nonreligious.

school enrollment The student population officially registered in American educational institutions. Total enrollment in all levels of education grew from the approximately 17 million of 1900 to an estimated 70 million in 2000. Here are the U.S. Department of Education’s actual enrollment figures for various levels of education in 1900 and 2000 and projected figures for 2010:

	1900	2000	2010
Elementary & secondary school, total	16,855,000	53,385,000	55,386,000
Public schools, total	15,503,000	47,223,000	48,891,000
Public schools, grades K–8	14,984,000	33,709,000	34,243,000
Public schools, grades 9–12	519,000	13,514,000	14,648,000
Private schools, total	1,352,000	6,162,000	6,495,000
Private schools, grades K–8	1,241,000	4,875,000	5,040,000
Private schools, grades 9–12	111,000	1,207,000	1,455,000
Higher education, total	238,000	15,313,000	17,541,000

No breakdown between public and private colleges and universities is available before 1940.

school funding The revenues needed to underwrite costs of operating educational insti-

tutions. Nationally, of the more than \$400 billion in total public elementary and secondary school revenues across the nation, about 50% comes from state governments, about 41% from local school districts and local government entities, 7.3% from the federal government, and 2.3% from private sources, including commercial organizations, foundations and individuals. The sources of private and parochial secondary school funding varied so widely that no meaningful averages have been developed.

Local school-district funding of public schools has long been the center of a nationwide controversy, and its future remains unclear. Most district monies originate from taxes levied on local property values, and courts in many states have deemed the system unconstitutional because it automatically favored schools in wealthy districts with high property values and low student populations. In 1994, Michigan responded by abolishing the use of property taxes to fund local public education. Instead, the state legislature adopted a new system of funding based on annual appropriations by the state, with funds distributed equally to each school district on a per-capita student basis. Prior to the change, per-pupil funding ranged from \$2,300 a year, in the poorest school districts, to \$9,900 in the wealthiest. While average spending per pupil across the state climbed to an average of nearly \$8,300 per pupil, or about 12% above the national average, the dollar gap between the richest and poorest districts in Michigan remained at an astonishingly high \$2,500 per pupil after nearly a decade of full-state assumption.

Though well-intentioned, the Michigan plan, and similar plans adopted elsewhere, did not equalize spending between poor and rich schools as much as legislators had hoped—largely because parents’ associations in wealthier school districts can raise substantial sums privately to cover the cost of programs that the tax-based budgets cannot cover. Many such

associations raise upward of \$100,000 annually to pay for such amenities as full-time art teachers, extra science teachers, full-time nurses and kindergarten aides. In comparison, schools in economically deprived areas, with the same state-mandated, tax-based budget, have no kindergarten aides, no art or science teachers and part-time nurses.

Although the official Michigan plan ended the debate over equalized government spending for education in rich and poor districts, it did not end the debate over whether the increased spending in poor districts would have any effect on educational quality. That second debate had been raging since 1966, when the United States Department of Education published a study of 600,000 students in 3,000 public schools and concluded that family and student attitudes, rather than spending, determined educational achievement. The report was largely ignored. Declining SCHOLASTIC APTITUDE TEST (now, SCHOLASTIC ASSESSMENT TEST) scores of college-bound high school seniors prompted parents, politicians and educators to call for more spending on education, and, over the next 35 years, per pupil spending across the United States rose from an average of \$2,700 a year to \$6,995 per elementary school student, the highest of any nation in the world, except Denmark, and \$8,855 per secondary school student, the highest of any nation but Switzerland. Average class size was reduced from 25 to 18, while the percentage of teachers with master's degrees rose from 25% to 42% and median teacher experience went from 8 to 15 years.

Ironically, scores on SAT verbal tests fell 6.6%, while math scores remained unchanged, and states that spent the most on education ended with the lowest scores, while many that spent the least produced some of the highest scores. The results fueled a new debate over whether increased spending had any effect on academic achievement. The "ayes" insisted that much of the spending increases over the previ-

ous quarter-century had not been on academics, but on federally mandated programs to expand educational opportunities for the handicapped. Moreover, they pointed out that the decline in SAT scores was less a reflection of lower academic achievement than of the increased pool of college applicants, which included far more immigrants and poor students than it had 25 years earlier. The states that spent most per student, such as New York, New Jersey and the District of Columbia, but had the lowest SAT scores, also had the highest proportion of poor and immigrant students, while states with low spending rates and high SAT scores—South Dakota, for example—had relatively easy-to-educate, homogeneous populations. In other states (mostly in the Deep South) with similar results to those of South Dakota, college-bound students who took SATs were largely limited to affluent whites. The black colleges and state colleges of the Deep South seldom require SAT or other entrance examinations.

In higher education, revenues of public institutions approached \$200 billion in 2005, while revenues of private institutions had climbed to nearly \$85 billion. Funding of public and private institutions, however, differed sharply, as the following figures from the U.S. Department of Education for 2004 indicate.

Revenue Source (by percent)	Public	Private
Tuition and fees	18.1	38.1
Federal government	11.2	16.3
State governments	35.6	1.4
Local governments	4.0	0.6
Private gifts, grants, contracts	5.1	19.3
Endowment incomes	0.8	0.0
Sales and services	19.6	23.5
Educational activities	2.8	4.2
Auxiliary enterprises (sports events, etc.)	9.3	10.6
Hospitals	9.5	8.7
Other sources	3.7	5.1

(See also SCHOOLING AND INCOME.)

schooling and income The relationship between years of formal education and annual personal earnings. Although median incomes tend to climb steadily, the relationship between schooling and income has remained relatively constant. Assuming 1.00 as the median income of all American men aged 25 and over, the median income of men with less than a ninth grade education is only .54, or about half the median income for all men, while the median income for men with professional degrees is 2.37, or more than twice that of all men.

Here are the relationships of schooling and income, for men and women, listed as a percentage of the median income for men aged 25 and over.

Educational Attainment	Men	Women
Median income, all ages, 25 and over	1.00	.75
Less than ninth grade	.51	.53
Ninth grade to twelfth grade (no diploma)	.63	.61
High school graduate (includes equivalency)	.83	.81
Some college, no degree	.99	.97
Associate degree	1.02	1.03
Bachelor's degree	1.34	1.31
Master's degree	1.70	1.62
Professional degree	2.40	1.97
Doctorate	2.09	1.98

school management The control and supervision of noneducational functions of educational institutions, including plant maintenance, construction, purchasing and finance. One of the most controversial and costly areas of education, school management is often given little attention in the curricula of most departments of education and teacher-training institutions. Indeed, the vast majority of school administrators—many of them former teachers who rose through the ranks—have virtually no formal training in business management and usually rely entirely on business managers and school superintendents to handle noneducational functions. The latter, however, usually

have no training or background in education, and the result for many public schools is a dysfunctional enterprise in which managers of the educational division and managers of the financial division know nothing about each other's operations and, despite their interdependency, have no controls over each other.

Nationally, costs of this dysfunction in public elementary and secondary schools rose to a staggering \$150 billion by 2000. About 46% of all public school funds were flowing into noninstructional functions. According to the United States Chamber of Commerce's Center for Workforce Preparation and Quality Education, which did a comprehensive study of school-district finances, 75% to 80% of funds earmarked for public school education should flow into educational functions, such as teacher salaries, instructional support, and instructional equipment and educational services.

In some major cities such as New York and suburban areas such as Long Island, public schools were rocked by financial scandals with astonishing regularity throughout the 1970s, 1980s, 1990s, and 2000s as unsupervised custodians, purchasing agents, business managers and school board officials pocketed supplies, services and funds, while classrooms and school buildings languished in disrepair, and schoolchildren and their teachers struggled with inadequate or outdated equipment and supplies. In 1990, only 33% of funds earmarked for New York City public school education found their way into the classroom in the form of educational services. Some cities have acted to correct the situation by turning over some or all management functions to private school management companies on a contract basis. Sweeping reforms in New York raised the percentage of funds designated for instruction to 70% by 2000.

school management companies See ENTERPRISE SCHOOLS; PERFORMANCE CONTRACTOR.

school nurse Usually, a registered nurse on a school's noneducational staff, charged with managing student health services. The nurse obtains certification that all students have received their proper inoculations and immunizations each year, renders emergency first-aid and performs superficial diagnoses to determine whether a student requires professional medical attention. The nurse may also check to verify the validity of student medical absences.

school phobia An overwhelming, persistent, irrational fear of attending school. Also known as "school refusal," the condition must be treated psychiatrically. Although its exact causes remain unknown, some clinicians associate it with fear of separation from or abandonment by the child's parents. Symptoms include refusal to attend or remain in school and frequent physical illnesses such as nausea, diarrhea, stomach pains and migraine headaches that preclude the child's leaving home.

school plant The physical structure of a school and all permanently affixed instructional and noninstructional equipment therein and on the school grounds.

school recognition programs An effort by the U.S. Department of Education to call attention to the successes of outstanding American elementary and secondary schools. The effort began in 1982 in the face of mounting criticism of educational quality and student achievement in American public schools. In addition to balancing public criticism with ample examples of outstanding schools and high-quality public education, the recognition programs provide models for less successful schools to emulate. First limited to public secondary schools, the recognition programs subsequently expanded to include private secondary schools and, by 1985, elementary public and private schools.

After being nominated for the programs, schools are reviewed by an external panel that examines all the school's documents and conducts a two-day on-site visit to determine if it meets detailed lists of "indicators of success" and "attributes of success." About 300 elementary and 300 secondary schools are recognized annually, although no specific number is sought. Schools may be nominated from all 50 states, Bureau of Indian Affairs schools, Department of Defense dependents schools and schools in the District of Columbia, Puerto Rico and the Virgin Islands.

Schools selected as "unusually successful" generally share these characteristics:

- Clear academic goals, with a clearly stated school mission and a strong emphasis on academics.
- High academic expectations for students, with students taking rigorous courses, and high standards in grading. There is a greater press in such schools for students to go to college and to work at their full potential. There is great concern for those experiencing academic difficulties.
- Order and discipline, with clear guidelines for student behavior. Students are responsible for personal behavior and school duties. Discipline is infrequent but fair and firm. Such schools generally have fewer disciplinary problems and exceptionally low class cutting and absentee problems. Such schools offer a safe, orderly, caring but regulated environment that promotes close teacher-student relations.
- Rewards and incentives for students, with frequent use of praise and direct performance feedback. Formal prizes were found relatively ineffective, while availability of teachers for personal assistance and consultation proved highly effective.
- Regular and frequent monitoring of student progress through frequent performance feedback to students and regular homework, clearly marked and graded to reflect high standards.
- Opportunities for meaningful student responsibility. High proportion of children in positions of responsibility; high participation in

extracurricular activities; many routes to success and diverse experiences for students.

- Teacher efficacy. Respect for teachers and teaching, recruitment of high-quality teachers, great autonomy for teachers, pleasant working conditions for staff.
- Concentration on academic learning time. Students actively engage in learning; classes begin on time; students do more homework; higher rates of attendance and less class cutting.
- Positive school climate, with greater teacher interest in students and shared activities between staff and students under pleasant working conditions. Teachers show high regard for adolescents and awareness of their values, producing a sense of community. Reciprocity in human relations and an orderly, caring environment were characteristic of superior schools.
- Administrative leadership, with consistent policies and procedures and clear authority to solve problems and create means of coordination. Administrators in the most successful schools displayed strong instructional leadership and displayed "vision" about school goals and direction.
- Well-articulated curriculum that translates the school's goals and philosophy, supported by appropriate texts. Superior schools often used TEAM TEACHING to promote curriculum development and articulation.
- Evaluation of instructional improvement. Standardized tests used for diagnosis and justification of curricular decisions such as emphasis on basics.

school security The men, women and equipment charged with protecting the on-campus safety of students and personnel and the integrity of campus property, buildings and equipment. Although teachers and staff have always been responsible for the security of students in their charge, security grew in importance at the secondary school level in the mid-1950s, with the emergence of armed, teen-aged gangs. Security concerns rose during the 1980s and 1990s, as the percentage of murders committed by children under 18 climbed from

about 9% in the early 1980s to a startling 12.8% by 1995. School crime is highest in crowded urban schools, many of which are now patrolled full-time by uniformed, and sometimes armed, security officers and equipped with metal detectors at each doorway. Since the early 1970s, when growing numbers of students began experimenting with chemical substances—and bringing them onto school premises to share with or sell to other students—almost all schools now conduct random locker searches while classes are in session.

At the college and university level, security is largely concerned with protecting students and the campus complex from crimes initiated by persons from the surrounding community. Federal law requires all colleges to disclose campus crime rates to prospective applicants.

Stepped-up security and strict enforcement of the SAFE SCHOOLS ACT OF 1994 combined with economic prosperity to reduce juvenile (and adult) crime rates in the last years of the 20th century. By 2002, juvenile crime had dropped 21% to its lowest level in nearly 20 years, as arrests for four types of violent crimes—murder, rape, robbery and aggravated assault—fell 46% from 596 to 322 per 100,000 youths aged 12 to 17. Although drug use remained unchanged, 21% of children 12 to 17 admitting they used drugs, arrests for drug abuse fell about 16%, from 722 to 607 per 100,000—a figure that may well reflect nothing more than increased skills in avoiding arrest. Arrests for drug possession fell only 6%. In contrast, alcohol abuse fell sharply, although the percentage of children who drink regularly remained frighteningly high; 33% of secondary school children reported that they consumed alcohol regularly, compared with 52.7% two decades earlier. Cigarette consumption dropped from 30% to 20%.

A large part of the decline in juvenile crime may be attributable to increased school security. Some 90% of all schools now have closed-

lunch policies requiring all students to remain on school grounds during their lunch periods. About 60% of public schools and 24% of private schools have violence-prevention programs that help teach youngsters how to control their own anger and impulses and how to cope with the anger and impulse behavior of others. About 23% of public schools and 5% of private schools have police or security guards on duty and visible each day; 15% of public schools and 8% of private schools use video surveillance; 21% of public schools and 5% of private schools stage random drug sweeps. Only 1.7% of public schools require students to pass through a metal detector on entering school each day, and 7.7% use random metal detector checks. A negligible number of private schools—less than 1%—use metal detectors. School authorities are notorious for refusing to report many crimes that occur at school, thus preventing the U.S. Department of Education from compiling accurate, up-to-date in-school crime statistics. Parents, however, are less reluctant, and in 2001, 8.9% of America's 16.2 million high school students—more than 1.4 million—reported being threatened or injured with a weapon on school property in 2001. Youngsters too young to be prosecuted as adults were the most likely to carry weapons, and indeed 12.7% of ninth graders and 9.1% of tenth graders report being threatened or injured by weapons on school property, compared with about 6% of eleventh and twelfth graders. Only about 8.5% of white and Asian schoolchildren reported being threatened or injured by weapons at school, while 9.3% of black children filed such reports, as did 11.3% of Hispanic children, 15.2% of American Indians and native Alaskans and nearly 25% of Hawaiian and other Pacific Island children.

The Safe Schools Act stripped schools of federal aid if they failed to expel students possessing drugs or weapons. Although homicide rates fell overall, it remained the second lead-

ing cause of adolescent mortality, as a new type of homicide—mass shootings—made its appearance on the school scene in 1999. Two students at Columbine High School in Littleton, Colorado, shot and killed 12 students and a teacher and wounded almost two dozen others before killing themselves on April 20, 1999. A month later, a 15-year-old gunman wounded six students at a high school in Conyers, Georgia. In December, a Fort Gibson, Oklahoma, middle school student opened fire with a semi-automatic handgun and wounded five students, and in March 2001, two students at Santana High School, Santee, California, shot and killed two students and wounded 13 others. The series of killings had at least one positive effect on America's schoolchildren—namely to break the pervasive code of silence against reporting fellow students to school authorities for rule violations. After the Santee killings, tips by students led to arrests in five California schools of students planning violent attacks on students or teachers, and school officials across the nation responded by equipping school entrances with metal detectors and hiring private security forces to patrol school hallways. Some schools forbade students to enter the school with book bags or cases of any kind. Most colleges have installed extensive safety and security measures, including locked gates and entry doorways and 24-hour security guards stationed in various dormitory entryways to check IDs. Pathways and sidewalks are usually brilliantly lighted, and emergency telephones and alarm buttons are placed strategically almost every 50 feet. In addition, many campuses provide campus shuttlebus and escort services after dark, and all colleges indoctrinate students regularly on the dangers of crime, through seminars, pamphlets, posters and self-defense education. Since the 1990s, federal law has required all colleges to disclose all reported crimes to the U.S. Department of Education each year and to prospective students,

along with a full description of on-campus security measures. Here are some basic statistics for violent crime on about 6,300 two- and four-year public and private colleges in the first few years that the Department of Education began compiling them:

	1999	2000	2001	2002	2003
Manslaughter/negligent and nonnegligent manslaughter	13	20	16	21	17
Forcible sex offense	1,725	1,810	2,061	2,202	2,379
Robbery	1,167	1,345	1,939	1,563	1,420
Aggravated assault	2,622	2,572	2,354	2,252	2,218
Burglary	20,237	21,450	22,196	23,369	23,260

In addition, there are about 5,000 to 10,000 motor vehicle thefts each year, more than 1,000 cases of arson, more than 1,000 arrests for weapons-law violations, about 12,500 arrests for drug-law violations, and more than 30,000 arrests for liquor-law violations. In 2003, the department also reported 71 hate crimes.

(See also CLERY CAMPUS SECURITY ACT OF 1990; CRIME ON CAMPUS.)

school social worker A trained professional with a degree in social work and specializing in counseling needy or socially unadjusted children and their families. Usually a full-time staff worker responsible to the principal, the social worker intervenes when a student's personal, social and emotional problems are having adverse effects on the student's work and behavior at school. Intervention may take the form of direct, one-to-one counseling or group and individual work with the student's family, teachers or fellow students. The social worker might also counsel the family to obtain outside medical, psychological or psychiatric services.

school songs Those melodies and lyrics that, like SCHOOL COLORS, are particularly associated with and symbolic of specific schools and

colleges. Seldom associated with elementary schools, they have their origins in the first schools and colleges of the Middle Ages. At the time, almost all schools and colleges were associated with the church or crown, and all processions and recessions were accompanied by the singing of a particular hymn. Processionals and recessionals remained in the realm of church music until secularization began eroding the theological structure of universities. Harvard University was the first American college to adopt a secular hymn, or alma mater, as the principal school song is usually called. In 1836, Samuel Gilman, Harvard class of 1811, introduced "Fair Harvard," sung to a traditional Irish air, to commemorate the 200th anniversary of Harvard's founding. Student songs, unrelated to their particular school or college, predate school songs by many centuries. Usually sung at celebrations, the most renowned is "GAUDEAMUS IGITUR" which may date from as early as the 13th century and has been sung by generations of students throughout the world at festive occasions. Still sung by many college GLEE CLUBS, its opening measure, *Gaudeamus igitur, Juvenes dum sumus*, calls on students to "be merry while we are young," to wish their teachers long life (*Vivat academia, Vivat professores*) and to pray that the school that educated them will flourish (*Alma Mater floreat, Quae nos educavit*).

School songs proliferated in the United States toward the end of the 19th century, as schools and colleges sponsored sporting events, and students cheered, and ultimately sang songs, to urge their school teams to triumph. Many school songs were written and composed by students who later went on to great fame as song writers. As an undergraduate, Cole Porter wrote two of Yale's famous football songs, "Bulldog" and "Bingo," which are still sung at Yale football games. At the end of the 19th century, the composer-to-be Charles Ives composed Yale's still-popular drinking song, "Here's to Good Old Yale."

school staffing ratios Any of a variety of ratios that relate the number of students to the number of full-time teachers (student-teacher ratio), counselors to students, administrators to teachers, etc. Such ratios are particularly important in school evaluations that seek empirical measurements to compare one school to national norms and to other schools in the area and in the state. The average national student-teacher (or pupil-teacher) ratio in public schools is about 16:1, or twice as many students per teacher as in private schools, which have a pupil-teacher ratio of 8:1. Public elementary schools have a student-teacher ratio of slightly more than 20:1, compared with 9.4:1 in private elementary schools, and public secondary schools have a 12.7:1 student-teacher ratio, compared with 7.7:1 in private secondary schools. University of Chicago School of Education studies indicate that the quality of education and student achievement increase in inverse proportion to the student-teacher ratio.

schools-within-a-school An administrative system in large schools whereby the student body is divided into smaller, semiautonomous administrative units of 500 or fewer students each. Usually applied at the secondary school level, the concept developed in the late 1950s, as huge urban and suburban comprehensive schools grew overcrowded and virtually ungovernable. Suburban schools used the luxury of open areas to build freestanding middle schools where the seventh, eighth and ninth grades were combined in a setting away from the high school. Urban high schools had little choice but to reserve specific physical areas within the building—either a wing or a specific floor—for the exclusive use of students assigned to a particular “school” within a school, or “house,” as it is often called. Each house has its own administrators, counselors and faculty. Specific classes or groups may go beyond the physical boundaries of each house to share certain common

facilities that might otherwise lie idle most of the time—science laboratories, for example—but never to use those facilities at times when they might commingle with students of another house. Some interschool contacts may occur in varsity athletics, the school band or dramatics, but the thrust is to give students the advantages of the atmosphere, warmth and individual attention inherent in small schools, along with the consequent decrease in violence, conflict, loss of individual identity, class absenteeism and other ills inherent in all large institutions.

Schools-within-a-school may be organized vertically or horizontally, with vertical schools made of students in a single grade and horizontal schools made up of students from all grades. Vertical schools-within-a-school tend to be more effective, because they accommodate individuality by giving students the flexibility to move up or down a half-grade, according to their ability. There is, in other words, more overlapping, with faster students able to move ahead and slower students able to take their time with the majority of their classmates, while a handful of their peers are simply accommodated in a class of slightly older students. But in essence they remain together as a class. In the horizontal schools-within-a-school, all students must remain at grade level, when some could easily master more advanced work in certain subjects. Still another advantage of vertical schools-within-a-school is the opportunity to grow socially by mingling with students of different ages.

schools without walls So-called open-space schools, with few interior partitions, allowing groups of students to work in separate areas of a huge, open space. An outgrowth of OPEN EDUCATION, or open classroom techniques, that developed in preschools of the 1930s and 1940s, schools without walls provided enormous appeal to both progressive educators and to taxpayers and school boards eager to cut the

escalation in school construction costs in the decades following World War II. Especially effective in elementary schools, schools without walls are particularly conducive to team teaching. Seated in different parts of a huge room, on carpeted floors that minimize noise, groups of students and their teachers work on one topic at a time, and, when appropriate, a second teacher specializing in another subject may arrive to introduce applications of the first subject to a second subject. Groups of students will join or separate, according to what they are studying. In simplest terms, a group studying Egyptian history with one teacher would learn the plane and solid geometry of the pyramid from another, the origins of language and hieroglyphics from a third teacher, art from a fourth and geography and political science from a fifth. Various groups might work together or apart, according to a schedule of team teaching determined by the faculty.

From the construction point of view, schools without walls eliminate all costs of partitions and their attendant insulation and wiring. When needed, portable folding partitions, portable chalkboards and other movable equipment can substitute for all materials that conventional walls might support. White-taped "alleyways" solve the problems of student traffic flow during and between classes.

School-To-Work Opportunities Act of 1994 A federal law requiring states to establish education programs in all public schools to prepare students either for continuing education or to provide them with skills necessary for entry into the job market after graduating from high school. In effect, the law ended all funding for GENERAL EDUCATION programs, which fail to achieve either of these outcomes, and it forced schools to begin developing effective new curricula for work-related vocational education to guarantee each student either a high school diploma (or equivalent), a nationally

recognized skill certificate or an associate degree that will lead to a first job or further education. Funded with more than \$1.5 billion in federal monies, the School-To-Work Opportunities Act provided financial and legislative impetus to the specialized "VO-TECH" and COOPERATIVE VOCATIONAL EDUCATION programs already functioning in about 500 forward-looking public school districts. Many school districts have been slow to establish effective vocational-education programs, which are usually more costly than conventional academic programs and tend to serve students from families of lower socioeconomic status who contribute lower property taxes to pay for local schools and, therefore, often have less political influence.

school visits Visits by parents and their children to evaluate a school and determine whether it is appropriate for one or more of their children. Evaluative parental visits are usually somewhat unwelcome in public schools, where administrators believe that parents have little choice but to send their children to a particular school. However, parents do have a wide range of SCHOOL CHOICE, and, as in visits to private schools, visits to public schools can simplify that choice by providing such information as whether the school is accredited by the appropriate regional ACCREDITATION ASSOCIATION, how students are doing academically and the colleges to which the school's graduates have been admitted. Visits also elicit such information as the quality of the school neighborhood, the physical condition of the school and grounds, the classroom teaching methods and atmosphere, the adequacy of the school library facilities, sports and extracurricular activities, special education programs, psychological services and guidance departments, and school security. A school visit may also include an interview with the principal or headmaster to determine the school's educational philosophy and how that philoso-

phy is translated into concrete results in the form of student achievement.

school voucher A certificate valid for a fixed sum of tuition funds that parents may withdraw from the funds set aside for educating their children in public school and use toward payment of education in any other public or private school in the state or district. A highly controversial form of SCHOOL CHOICE, vouchers were first introduced in 1990 by the city of Milwaukee, which passed a scheme whereby low-income students were provided with funds to attend other, nonreligious schools.

Although California and Michigan voters subsequently rejected a voucher plan, Puerto Rico became the second school system to introduce a voucher system in 1993, when it offered vouchers worth up to \$1,500 a year at any private or public school for children from families earning less than \$18,000 a year. The system came under immediate attack in the courts by the island's three teachers' unions who claimed that dollars spent on vouchers siphoned badly needed funds from public schools. Proponents of vouchers maintained it would force the poorest public schools to compete with better schools or go out of business. Opponents said it was illegal to use public funds to support private and parochial schools and that the voucher system was designed to provide public financial underpinnings for a flagging parochial school system. In a 2002 ruling in the case of *ZELMAN V. SIMMONS-HARRIS*, however, the United States Supreme Court found by a 5-4 vote that the school-voucher program in Cleveland, Ohio, was constitutional. The Court declared that any program allowing parents to use vouchers to pay for religious school tuition for their children was constitutional as long as the state and school district remained "neutral" with respect to religion and designed the program to broaden the choice of schools for children, when the children are restricted to failing

public schools solely because of the geographic location of their residence within a specific school district. In this case, the district "failed to meet any of the 18 state standards for minimal acceptable performance," according to the Court decision. "Only 1 in 10 ninth graders could pass a basic proficiency examination, and students at all levels performed at a dismal rate compared with students in other Ohio public schools. More than two-thirds of high school students either dropped out or failed out before graduation. Of those who managed to reach their senior year, one of every four still failed to graduate. Of those who did graduate, few could read, write, or compute at levels comparable to their counterparts in other cities." Under those circumstances, the Court ruled, the Cleveland, Ohio, program provides "benefits directly to a wide spectrum of individuals . . . [and] permits . . . genuine choice among options public and private. . . ."

In 2006, however, a Florida Supreme Court all but trumped the U.S. Supreme Court and proponents of vouchers in *Bush v. Homes*, which declared vouchers illegal because they violated the state constitution provision for "a uniform . . . system of free public schools." Vouchers, it said, diverted public funds into "separate private systems parallel to and in competition with the free public schools. . . . This diversion not only reduces money available to the free schools, but also funds private schools that are not 'uniform' . . . with each other or the public system." Even more damning to the voucher system and its proponents was the lack of federal issues in the ruling, thus barring any appeal of the Florida decision to the U.S. Supreme Court. In effect, the ruling ended all prospects for vouchers in Florida and, by implication, could affect prospects for vouchers in other states with a similar constitutional provision. Since Wisconsin first introduced vouchers, Ohio, Colorado and Utah instituted their own systems—each slightly different from the others—and Congress imposed

a voucher system in the District of Columbia. The Wisconsin Supreme Court upheld the (state) constitutionality of the Milwaukee voucher system in *Jackson v. Benson*, and the U.S. Supreme Court upheld Ohio's system. But Colorado's State Supreme Court ruled that the state's voucher system was unconstitutional because it stripped local school boards of their control over education and violated a provision of that particular state constitution. Therefore, the future of vouchers in each state depends on whether vouchers violate state constitutions. States with constitutional provisions for "uniform" public education or mandatory school-board control of all schools will either have to change their constitutions or abandon all thoughts of adopting voucher systems or, for that matter, opening alternative schools such as CHARTER SCHOOLS that violate the uniform education provision.

(See also SCHOOL CHOICE.)

science A broad term meaning, collectively, all verifiable knowledge and, specifically, any single body of verifiable knowledge—literally, knowledge in contrast to ignorance. In education, however, the term has taken on a more specific meaning, namely, those bodies of systemized knowledge concerned with the physical world and its observable and measurable phenomena. Although the term may be applied accurately to virtually any area of knowledge—the science of writing, of theology or of football—science in education is generally limited to the natural sciences, as opposed to the arts, in that accepted knowledge in the natural sciences is largely derived from laws obtained through observation and experiment.

The first efforts to systematize scientific knowledge can be traced to paleolithic times and to designs on the walls of caves. Mesopotamian civilizations produced records of astronomical observations, chemical substances, disease symptoms and mathematical tables.

Babylonian mathematicians knew the Pythagorean theorem, solved quadratic equations and developed an elaborate system of measurement as early as 2000 B.C. Scientific knowledge spread through the Nile Valley, with the development of early systems of solid geometry and astronomy. The Greek philosopher Thales explored natural phenomena in the sixth century B.C., while Pythagoras systematized mathematics into a fundamental tool for scientific investigation. In the fourth century B.C., Plato developed deductive reasoning and mathematical representation, while Aristotle developed a system of inductive reasoning and qualitative description and classification that combined to form the core of scientific investigation for the next 20 centuries.

Astronomy, geometry, mechanics, hydrostatics, botany, anatomy and physiology made great strides during the so-called Hellenistic Age following the death of Alexander the Great, but scientific progress came to a virtual halt after the Roman destruction of Carthage and Corinth in 146 B.C. Although progress continued in other cultures—particularly Arabic, Hindu and Chinese—disciplined scientific inquiry in the modern sense began to see a revival in western Europe only with the publication of the works of Copernicus in astronomy and of Vesalius in anatomy in 1543. Two years later, Italian mathematician Geronimo Cardano (1501–76) modernized algebra. The seminal work of Galileo Galilei (1564–1692) in mathematics, astronomy and physics may be said to have opened the way for the development of all modern science.

In the English-speaking world, science of a sort was first taught at Oxford and Cambridge Universities in England in the 1250s. This was a result of papal authorizations that permitted the teaching of Boethiusian arithmetic, Euclidean geometry, Ptolemaic astronomy, Galenian and Hippocratic medicine and the three philosophies—mental, moral and natural—the

last referring to a broad scientific study. During the 13th century, Roger Bacon (?1220–92) at Oxford expanded the frontiers of Aristotelian science (arithmetic, geometry, music and astronomy), incorporating Arabic learning, observation and controlled experiment, but scientific activity—apart from alchemy—was largely suppressed by religion and superstition until the 17th century, when England's Sir FRANCIS BACON provoked a shift of intellectual focus from the supernatural to the natural. A nonacademic humanist, Bacon developed a startling new theophilosophy that contested the Old Testament dictum that "in much wisdom is much grief." Although ambivalent about knowledge, he nevertheless recognized the universe as God's creation and believed that knowledge of the universe produced a more profound knowledge of God. Francis Bacon revitalized the discipline of observation and refined the INDUCTIVE APPROACH.

The Age of Enlightenment that followed Bacon saw a spectacular growth in the body of the sciences and their study in schools and universities in England and in the colonies, with the opening of the first American institutions such as HARVARD COLLEGE and the COLLEGE OF WILLIAM AND MARY. At first, the four basic Aristotelian sciences—arithmetic, geometry, music and astronomy, along with such subtopics as mechanics, optics, physics, meteorology, zoology and botany—were studied as a totality, usually called "natural philosophy." The Age of Enlightenment, however, saw the sciences accumulate too much remarkable new information to be studied as one all-encompassing subject. The work of Robert Boyle in the 17th century and chemist Antoine Lavoisier (*Traité élémentaire de chimie*, or Treatise on chemical elements) in the 18th century led to the spin-off of chemistry as a separate scientific subject. In the 19th century, the works of British physicists John Dalton, James Faraday, James Clerk Maxwell and James Prescott Joule and others

separated physics from the broad science curriculum as a separate course of study. And the work of Charles Darwin added so much to the scientific literature as to necessitate spinning off biology as a separate course.

Although still taught at the elementary and secondary school level as a superficial overview in the form of "general science," the natural sciences at the beginning of the 20th century had been divided into the physical and biological, or earth, sciences, with the former including physics, chemistry, astronomy and geology, while the latter included botany, biology and zoology. At the college level, each was taught as an individual course. Subsequent subdivisions, mostly in the last half of the 20th century, saw the physical sciences subdivided into mechanics, cosmology, geology, physical chemistry and meteorology and the biological sciences further subdivided into physiology, embryology, anatomy, genetics and ecology.

By the 1970s, the standard elementary school science curriculum consisted of a basic one-year "general science" course with its traditional overview of the entire science curriculum, followed in secondary school by specialized one-year courses in biology, chemistry, physics, astronomy and geology, with only one or two of the specialized courses required for graduation. Ironically, in the 1980s the primary school and secondary school study of the sciences began reverting to the 17th and 18th century principle of an all-encompassing course that tied each of the scientific branches together into a single, interrelated, cross-disciplinary unit. Comparable in its curricular format only to the old "natural philosophy" curriculum, the current curricular approach is to study the sciences as an interrelated group for three years. Under the new, unified curriculum, chemistry, physics, biology, geology and astronomy studies are conducted as intensively as they might have been in individual courses,

but their relationship to each other and to life beyond the laboratory is now integrated into the course.

Once the leaders in science education, American schools generally are now failing to help students keep up with students from other developed nations. American 15-year-olds scored 13th in a test of students from 28 member nations of the Organization of Economic Cooperation and Development. At a higher academic level, the number of doctorates has dropped 5% in all sciences and 13% in physics in the last 30 years. Of the more than 15,000 doctoral degrees awarded in the sciences, mathematics and engineering each year, more than 6,100, or almost 41% were awarded to nonresident aliens—more than 5,000 of them from China, India and Taiwan. Foreigners earned 45% of doctorates awarded in the physical sciences.

Science: A Process Approach (SAPA) An elementary school science curriculum developed in the early 1960s that replaced rote memorization of scientific facts, figures and formulae with a reasoned, hands-on, sensory approach to learning. The K–6 curriculum was developed by a team of teachers, psychologists and scientists working under the auspices of the American Association for the Advancement of Science. Although the content of the curriculum remained unchanged, the approach to learning was shifted to an activities-oriented process involving experiment and reasoning as the primary method of developing a permanent understanding of scientific phenomena. The program was divided into two broad segments, one for K–3 students and the other for grades 4–6. K–3 students learned to observe, classify, measure, infer, predict and formulate basic experiments, using numbers and time-space relationships. The curriculum for older students involved formulating hypotheses, defining procedures, controlling variables, interpreting data and, in effect, participating in

simplified versions of the experimental processes they would encounter in secondary school and college. SAPA used no specific textbooks, depending instead on kits and on materials available at home, school and in the environment.

Science Curriculum Improvement Study (SCIS) A widely used, commercially available, elementary school science curriculum developed at the University of California–Berkeley, in 1961. A highly structured, hands-on, laboratory-oriented curriculum, the ready-to-use program consists of 12 units, one each in life science and physical science for each of the six elementary grades. In addition to teachers' guides and appropriate printed materials, SCIS sells all the supplies, animals and living organisms required for student experiments. The juxtaposition of life science and physical science is the key to the program. In fourth grade, for example, the physical science curriculum deals with measurement, motion, change and spatial relationships, using the solar system, time and weather phenomena as primary examples. The life science segment, meanwhile, deals with the effects of seasonal change, temperature, weather and time on living organisms and the environment.

science education centers Educational organizations specializing solely in science instruction to student groups of all ages, from kindergarten children to senior citizens. Located in federal parks, forests, refuges and recreation areas, the centers are operated, variously, by private research organizations, educational foundations and the National Park Service. All, however, offer formal, specialized courses in a wide variety of sciences related to wilderness areas, such as wildlife, plants, ecology, geology and forestry. Classes are grouped by age and are usually conducted in conjunction with school and college curricula, with full course

credit. Most centers have campsites, some with rustic cabins to lodge students. Courses for kindergarten and other early elementary students usually last only about two days. Classes are held in the wild, using the land itself, along with its flora and fauna, as a laboratory to demonstrate lecture materials. Courses for the youngest and oldest students are less specialized than those for high school and college students, whose courses might well center on, say, hoofed mammals, the trumpeter swan or wolf recovery. Although a handful of centers are scattered in such eastern areas as Florida, Pennsylvania, New York and New England, most science education centers are in the west, in or near major national parks in California, Oregon, Washington, Montana, Wyoming, Colorado, Utah and New Mexico.

science kit A packaged collection of items needed to conduct and complete a science experiment. Commercially or teacher-prepared, kits may be designed for use by students in the classroom laboratory or by the teacher as a classroom demonstration project.

Science Research Associates A major educational publisher that produces standardized textbooks, prepackaged instructional materials and widely used achievement tests in reading, mathematics, language arts, social studies, work-study skills and science. Designed for students in grades 1–9, the achievement tests are norm-referenced for rural and small-town schools, nonpublic schools and high-level socioeconomic schools, thus yielding appropriately scaled scores for students from different types of schools. Originally an arm of International Business Machines, SRA is a subsidiary of McGraw-Hill Publishing Company.

scope and sequence Curriculum development terms referring to the horizontal and vertical placement and relationship of materials to

be taught. The scope of any portion of the curriculum envelops the horizontal or side-by-side positioning of materials, as in the elements of history, physics, geometry, art and language development that will be included in the study of the Egyptian pyramids in a single year. Curricular sequence, on the other hand, deals with vertical positioning of topics—the “when” of teaching—as in the positioning of biology, chemistry and physics in various grades of high school or within the context of an elementary school general science course.

Scopes Monkey Trial The colloquial, newspaper-headline title of the near-legendary court case of 1925, when a high school science teacher, John Thomas Scopes, was charged with violating Tennessee’s law banning the teaching of Darwin’s theory of evolution. The case gained worldwide notoriety, not for the facts or background of the case, but for the cast of characters, among whom Scopes himself was, perhaps, the least important.

The saga began on March 21, 1925, when Tennessee’s governor Austin Peay signed into law the Butler Act, which made it illegal for any state public school or university “to teach any theory that denies the story of the Divine Creation of man as taught in the Bible, and to teach instead that man has descended from a lower order of animals.” It imposed a fine of \$100 to \$500 on any teacher who violated the law.

After the American Civil Liberties Union decided to challenge the law, its representative, a local mining engineer, persuaded Scopes, a 24-year-old science teacher and football coach at Dayton High School, to join the challenge. Ironically, all that Scopes did was to do what he had always done—assign students the state’s own, prescribed biology textbook, George William Hunter’s *A Civic Biology* (1914), which explained the theory of evolution. Formal charges were filed against Scopes, who was

arrested on May 7, 1925, and charged in a preliminary hearing on May 10. It was then that the major characters in the plot moved onto center stage. The gifted orator William Jennings Bryan, a three-time candidate for the U.S. presidency and a staunch Christian fundamentalist, agreed to represent the WORLD'S CHRISTIAN FUNDAMENTALS ASSOCIATION and serve as associate counsel in the case with the state's prosecutors. Clarence Darrow, the world-renowned trial lawyer and gifted orator, agreed to serve as co-counsel for Scopes.

The appearance of the two "stars" on the same stage drew hordes of spectators and more than 100 reporters from around the world. At stake was nothing less than the legal supremacy of the American Constitution over the Bible, with Darrow assembling a cast of distinguished legal scholars and scientists to argue that the Butler law was unconstitutional in that it established a state religion. In any case, they argued, using the Bible as a substitute for scientific truth was nothing less than irrational, because even biblical scholars disagreed over interpretations of Scripture. Bryan's argument rested not only on biblical inerrancy but also on the question of the parental right to determine whose truths their children would be taught—the truths of parents or the truths of professional experts. After six days, the judge ruled such testimony irrelevant to the case, which, he said, hinged only on whether Scopes had violated the law, not on whether the law was constitutional or valid.

On the seventh day, however, Darrow shocked the world by calling Bryan to the stand; surprisingly, neither the judge nor Bryan objected. Darrow destroyed Bryan, asking such questions as whether Jonah really remained in the whale's belly for three days; whether the great flood occurred in 4004 B.C.; whether the Earth was really created in six days; and how the serpent moved from point to point before being condemned to crawl on the ground eter-

nally on its belly. Bryan's attempts to support a literal interpretation of the Bible drew gasps of disbelief from the audience. As the formerly heroic figure grew confused and dazed, the judge tried intervening: "What is the purpose of this examination?" he thundered. "We have the purpose," Darrow fired back, "of preventing bigots and ignoramuses from controlling education of the United States and you know it, and that is all." Even Bryan's supporters withdrew from the public eye, as the absurdity of his literal scriptural interpretations became evident.

Ironically, on the eighth day of the trial, the jury deliberated only nine minutes before returning a guilty verdict, whereupon the judge fined Scopes \$100. The Supreme Court of Tennessee upheld the Butler Act but reversed the fine because the state constitution mandated that all fines of more than \$50 had to be imposed by a jury rather than a judge. Bryan died five days after the original trial, a beaten man, leaving the Christian fundamentalist movement in leaderless disarray until after World War II. But the greatest irony of the trial is that it produced none of the great constitutional interpretations that its main characters—and, indeed, all Americans—had hoped for. In the end, the case involved only the question of whether Scopes had violated the Butler law. The jury decided he had.

The law remained in effect until the Tennessee legislature repealed it in 1967, and it was not until 1968 that the U.S. Supreme Court handed down the first decision declaring anti-evolution legislation unconstitutional.

(See also *EPPERSON V. ARKANSAS*; CREATION SCIENCE; INTELLIGENT DESIGN.)

Scottish "common sense" philosophy A school of philosophy founded by Thomas Reid (1710–96), who argued that human sensory impressions are accurate, valid and reliable impressions of the natural world. Published in

1764 in his *Inquiry into the Human Mind on the Principles of Common Sense*, Reid's philosophy was in direct opposition to that of British philosopher David Hume, who maintained that human reasoning, based on sensory impressions, was inobjective. Even more far-reaching in its consequences, Reid's man-centered philosophy undermined the validity of many basic church premises and God-centered teachings: It implied that many spiritual elements of church doctrine may not exist, because humans cannot see, hear, feel, smell or taste them.

Reid was born in Strachan, Kincardine, Scotland, and was a professor of philosophy at King's College, Aberdeen, and later at the University of Glasgow. He influenced an entire generation of Presbyterian minister-scholars who migrated to the American colonies and, in their turn, influenced American higher education in the late 18th and throughout the entire 19th centuries. First and foremost of these was JOHN WITHERSPOON, the sixth but by far the most influential of the early presidents of the College of New Jersey (now Princeton University). Indeed, in his 25 years as president he reshaped the college into a secular, albeit pious, school that produced leaders of the new American republic and shaped secular education for the next 100 years. Among Witherspoon's students were the future president James Madison, the future vice president Aaron Burr, 10 future cabinet officers, 60 future members of Congress, three future justices of the Supreme Court and his own successor at Princeton, Samuel Stanhope Smith. In his lectures, Smith summed up the Scottish "common sense" school by saying that "the testimony of our senses and of all our simple perceptions . . . ought to be admitted as true, and no ulterior evidence be required of the reality, or the nature of the facts which they confirm."

In education, Smith expanded on the Scottish common-sense realism he had learned from Witherspoon by enlarging the Princeton

curriculum to include the widest range of secular courses of any college in the colonies. Smith's students, in turn, went on to head the Universities of Pennsylvania, North Carolina and others, thus carrying the influence of Scottish common-sense philosophy to every corner of the new nation in the early 1800s. Indeed, Scottish realism, according to one historian, "overran the country" during the revolutionary era "and had an exclusive and preponderant influence well beyond the centennial of the country's independence." It was not until the development of the laboratory sciences at the end of the 19th century that the reliability of raw, sensory observations came into question once again.

screening test Any of a wide variety of written, oral or other form of examination used to accept and reject specific individuals or groups of individuals from a specific activity. Thus, screening tests may be used to eliminate ineligible applicants for teaching or staff positions—or prospective students. Screening tests may also be used to identify a variety of learning or physical disabilities requiring special education—or to identify specific skills and skill levels required for participation in a variety of academic and nonacademic school activities, such as the school orchestra or football team. Screening tests use a variety of criteria, including minimum test scores and demonstration of specific aptitudes, abilities and skills.

sea-grant colleges A group of colleges in five coastal states that trains professional officers for the United States Merchant Marine. Created by Congress under the 1966 National Sea Grant and Program Act, the sea-grant colleges are somewhat akin to the LAND-GRANT COLLEGES that Congress created in the 19th century to train students for agriculture and mechanics (engineering). Like the land-grant colleges, the sea-grant colleges are public and are one of

many academic programs or "schools" in what are otherwise conventional state university systems. Funded in part by the U.S. Department of Commerce, the sea-grant colleges duplicate the curriculum and training offered by the U.S. MERCHANT MARINE ACADEMY. The five sea-grant colleges are the California Maritime Academy, the Maine Maritime Academy, the Massachusetts Maritime Academy, the State University of New York Maritime College and Texas A & M University at Galveston.

searches of students In education, the physical inspection by school authorities of the person and property of minor students and the equipment they use. A highly controversial legal and social issue, student searches became increasingly essential in many American elementary and secondary schools in the last half of the 20th century, as minors gained access to drugs and weapons. There is no question of school authorities ever searching students who have reached the age of majority and are, therefore, fully protected by the Fourth Amendment of the U.S. Constitution, guaranteeing the "right of the people to be secure in their persons, houses, papers, and effects, against unreasonable searches and seizures." To search the person or property of a college student, for example, college officials would have to turn to the police, file formal charges and obtain a warrant, or provide evidence that a crime was being or was about to be committed.

Children, however, were chattel at the time of the writing of the Constitution, and, for the first 150 years of the republic's existence, teachers and school administrators routinely searched any student's person or property when it seemed in the best interests of school discipline. In the last decades of the 20th century, however, an increasing number of parents have filed civil suits and even brought criminal complaints against teachers who so much as touched their children, and the courts have

been hesitant to provide educators, parents or students with a definitive set of rulings on student searches. A few state courts have ruled that school authorities have the right to search student desks and lockers, which are legally the property of the school. Some states, however, insist that such searches be conducted only with student permission and with the student and at least one adult witness present. Most states now require that schools include in their published school rules their policy with regard to desk and locker searches.

As for searches of the student's person and property, the first, somewhat definitive U.S. Supreme Court decision on the subject came in 1985, in *NEW JERSEY V. T.L.O.* In that case, the Court ruled it legally permissible for public school officials and teachers to search a student's property as long as the scope of the search was proper and there were "reasonable grounds" to believe the search would yield evidence of a violation of the law or school rules. Although the Court said that students were covered by Fourth Amendment protection against "unreasonable searches and seizures," it said that school officials could conduct certain types of searches without a warrant as long as they fulfilled two important prerequisites: they based the search on grounds of reasonable suspicion and they limited the scope of the search to one that was appropriate for the circumstances.

In the case of "T.L.O." (the initials of a girl whose name was kept confidential), the student was caught smoking in the school bathroom. School officials searched her pocketbook and found drug paraphernalia and evidence of recent drug sales. They called police, and she was arrested. She challenged her eventual conviction on the grounds that the evidence against her had been seized illegally, but the Court ruled against her.

Noting that violent crime and drug use in schools had become "major social problems," the Court declared that "the school setting

requires some easing of the restrictions to which searches by public authorities are ordinarily subject." The Court failed, however, to provide specific, in-school search-and-seizure rules and left most educators unclear about the extent of their rights in this area. "The legality of a search of a student," said the Court, "should depend simply on the reasonableness, under all the circumstances, of the search."

secondary education A generic term referring to all formal education between elementary school and college, usually seventh through twelfth grades. Secondary education usually consists of two programs: junior high, or middle, school, with seventh and eighth grades, and senior high, or simply high school, with grades 9–12, offering general, technical, vocational or college-preparatory curricula. Often housed in separate buildings and even on different campuses, both differ from elementary education in that the faculty is made up of specialist teachers, each conducting courses in a specific subject, with students moving from classroom to classroom throughout the school day to study each subject. In contrast, elementary school teachers are usually generalists, each of whom teaches almost the entire curriculum to a specific age group in the same classroom throughout the school day.

Unlike elementary education, secondary education was slow to develop in the United States. Long reserved for a relatively small, wealthy, academic elite preparing for college, secondary education has its roots in the early, colonial grammar schools—the first having been Boston Latin, which was founded in 1635. At the time, primary education in petty schools consisted of about three years of education in basic reading, writing and calculating for five- to seven-year-olds. Secondary education, which lasted about seven years, was reserved for wealthy or particularly talented boys and progressed to Latin, Greek and occasionally

Hebrew, along with a thorough study of the Scriptures. From grammar school, students who wanted to continue their education either enrolled at Harvard College, the only college in the colonies in the early 17th century, or crossed the Atlantic to enroll at an English, Scottish or continental university.

As the grammar school curriculum expanded in the 18th and early 19th centuries to include the sciences, modern languages, philosophy and other courses, another type of secondary school, the *ACADEMY*, evolved. Academy education varied widely, with some offering little more instruction than the traditional grammar school and others a range of education comparable to any college in the colonies. With the advent of public education in the 19th century, primary and secondary education underwent a radical structural change, with primary schools gradually evolving into elementary schools and expanding their curricular reach from kindergarten through sixth grade. Grammar schools and academies metamorphosed into junior and senior high schools, offering instruction from grades 7–12.

Until well into the 20th century, most American children ended their education after elementary or junior high school. As late as 1940, only 50.8% of American 17-year-olds actually finished high school. The earliest available figures show that only 2% of American 17-year-olds graduated from high school in 1870, 2.5% in 1880, 3.5% in 1890 (half of them from private schools, however) and 6.4% in 1900 (one-third from private schools). By 1930, 29% of American 17-year-olds were graduating from high school, with nine-tenths of them emerging from public schools. The percentage of 17-year-old students who graduated from American high schools reached a peak of 88% in 1999 but began what has been a steady decline with the increase in the population of legal and illegal immigrants: to 87.7% in 2001, 86.4% in 2002, and so on. Although the Department of

Education is slow to compile statistics, the percentage is believed to have dropped to less than 85% in 2006 and seemed well on the way to falling below 80% by 2010.

Secondary School Admission Test (SSAT)

A standardized battery of tests used by more than 500 American private, independent elementary and secondary schools to measure student quantitative skills, reading comprehension skills and verbal skills. Each of two batteries—one for admission to grades 6–8, the other for admission to grades 8–11—is administered at more than 600 sites across the nation on seven Saturday mornings a year, in November through April and in June. Sponsored by the Secondary School Admission Test Board, the test is but one of dozens of criteria for evaluating applicants for admission and, indeed, is but one of two standardized tests used by nonparochial private schools. Many independent schools use the INDEPENDENT SCHOOL ENTRANCE EXAM, while parochial schools tend to prefer the less demanding Cooperative Entrance Exam or High School Placement Test. The SSAT consists of five parts, beginning with a 25-minute essay question, followed by four tests using objective questions and lasting 30 to 40 minutes; the last part is a 30-minute essay question to test writing skills.

Secondary School Science Project (SSSP)

An earth-science course developed by a group of geologists in the 1960s for high school students. Like many courses and curricula developed to encourage student interest in the sciences, SSSP replaced traditional textbook study with a sequence of student experiments and investigations, through which students compiled textbooks of their own from their accumulated notes and observations.

secretary of education (U.S.) The administrative head of the U.S. DEPARTMENT OF EDUCATION, a cabinet-level department that administers

and coordinates most federal aid to education and compiles statistics on and disseminates the vast majority of data on American education. Appointed by the president of the United States, with the approval of the U.S. Senate, the secretary of education, like all cabinet officers, serves at the pleasure of the president and may be removed by the president at will or by congressional censure or impeachment. Charged with carrying out presidential policies, the secretary—again, like all cabinet officers—has no executive function. The first secretary of education was Shirley Hufstедler, appointed by President Jimmy Carter in 1979, when the department was created. She was succeeded by TERREL BELL (1981–85), WILLIAM J. BENNETT (1985–88) and Lauro F. Cavazos (1988–89), all of whom served in President Ronald Reagan’s administration. Cavazos (1989–91) and Lamar Alexander (1991–93) served in President George H. W. Bush’s administration, Richard W. Riley (1993–2001) was secretary of education in President Bill Clinton’s administration, and Dr. Roderick R. Paige was President George W. Bush’s first secretary of education and the first African American to hold that post. Dr. Paige resigned in 2004, and President Bush replaced him with Margaret Spellings.

Prior to elevation to cabinet rank, the administration of the federal government’s education functions had been headed by a commissioner of education in the Department of Health, Education and Welfare—prior to 1953, in the Department of Interior. The first commissioner of education was the renowned American educator HENRY BARNARD, who was named to the post in 1867. His successors had few duties and were relatively impotent figures who, at best, could use their small and powerless agency only as a “bully pulpit” to preach the tenets of progressive education and school reform.

segregation The involuntary separation of people according to various characteristics such

as race, religion, national origin, gender, physical or mental disadvantages or other definable differences. There are two broad types of segregation: de jure and de facto, the former referring to segregation by law and the latter to segregation by actuality.

Until 1954, de jure segregation of African Americans was the law in states throughout the American South and parts of the Southwest, where blacks and whites lived in separate neighborhoods, sent their children to separate schools and, in many respects, lived their lives separately. The law required that they stay in separate hotels, ride in different sections of trains, buses and other transit facilities, go to separate parks, swim in separate public pools, use separate public washrooms and eat in separate restaurants. There was little question that such segregation forced poor racial minorities into inadequate living conditions, where they received little or no education or other resources with which to emerge from poverty.

Although African-American segregation was most pervasive, American Indians were segregated on reservations in the West, while women were barred by law from male universities until late in the 19th century and from the voting booth until 1919. Jews were barred by town ordinances from living in many towns, and hotels and restaurants throughout the United States had the legal right to exclude them if they so chose. Legal discrimination enabled industries to bar blacks, women, Jews, Roman Catholics, Asians and a host of other qualified men and women from a wide variety of jobs. Members of certain professional or occupational groups, such as professional actors or circus performers, were barred from many hotels and towns.

In 1954, the U.S. Supreme Court declared racial segregation unconstitutional in American public schools, in the world-renowned case of *BROWN V. BOARD OF EDUCATION OF TOPEKA*. Beginning in 1957, Congress passed three sweeping

Civil Rights Acts, in 1957, 1960 and 1964, that outlawed all forms of discrimination on the basis of race, religion, national origin, gender, age, physical or mental disadvantages. For the most part, these laws are being enforced as stringently as possible in most areas of the United States.

Elimination of de jure segregation has not, however, eliminated de facto segregation, which remains a pervasive social, economic and educational problem in the United States. Though not the result of any laws, millions of American neighborhoods and small towns are segregated by race or religion from mainstream America—in some cases, self-segregated, in others, segregated by groups who shun other groups and refuse to live with them side by side. Some small Mormon villages in Utah, Idaho and other parts of the Rocky Mountains, for example, seek to remain 100% Mormon and shun non-Mormons who would live among them. Black slums in virtually every American city are often the result of unequal access to good education, to equal job opportunities and to housing in predominantly white areas.

In 2001, Congress authorized the establishment of the equivalent of a national voucher system as part of a reauthorization of the ELEMENTARY AND SECONDARY EDUCATION ACT OF 1965. Called the NO CHILD LEFT BEHIND ACT OF 2001 (NCLB), the reauthorization law imposed testing requirements on public school districts in all states and requires every school to demonstrate year-to-year improvements in academic performance—or face loss of federal subsidies. Aimed especially at schools with disadvantaged children, NCLB allows parents in failing public schools to transfer their children to other public schools or charter schools, though not religious schools, and obliges the former school district to provide grants—the equivalent of vouchers—of \$500 to \$1,000 per child to cover costs of attending the new school.

The transfer of the lowest achievers has raised the academic performances of once-failing schools and entitled such districts to larger federal government grants. Minnesota proposed giving \$4 million worth of tax credits to corporations willing to provide scholarships to private schools to accept 1,500 low-income students transferring out of low-rated public schools. Ohio proposed a program that would offer \$3,500 scholarships for a similar program. South Carolina, Wisconsin, Ohio, Indiana and Missouri have all developed similar school-choice plans.

An ongoing study by the Civil Rights Project at Harvard University that began in 1993 and continues to this day found that de facto segregation of schools has actually increased since the 1954 *Brown* decision, with 83% of black students now attending predominantly minority schools, compared with 77% in 1968 and 63% in 1980, when court-ordered busing forced communities across the nation to desegregate. The average black student in America attends a school with fewer than 31% white students; Latino students attend schools where, on average, only 29% of students are white; and whites attend schools where, on average, 80% of students are white. The study cites higher birth rates, poverty and immigration among various causes of increased racial segregation, provoking white flight to the suburbs and leaving black and Hispanic students concentrated in city districts with few white families. Since 2000, the number of Hispanic children has increased more than 50%, and they now account for 18.33% of American schoolchildren—the largest minority in American schools. Although the number of black children has increased 8% in that time, they now constitute only 15.5% of the school population. The number of white children increased by only 5% and constitute a shrinking 67.4% majority of schoolchildren. Hispanic children make up 51% of the school population in New Mexico, 44.5% of school-

children in California, 41.7% in Texas, 35.3% in Arizona, and between 20% and 30% in Colorado, Nevada and Florida.

In the nation's largest cities, 15 of every 16 black and Hispanic students are in schools where most of the students are nonwhite. In medium-sized cities, 63% of African-American and 70% of Latino students attend such schools. The Harvard study found that black and Hispanic students are much more likely than white students to be in schools where academic achievement is below national averages. In states with the most racially segregated schools, the percentages of blacks attending schools where minorities make up 90% to 100% of the student bodies are 59.3% in Illinois, 58.5% in Michigan, 57.5% in New York, 54.6% in New Jersey, 45.7% in Pennsylvania, 37.3% in Tennessee, 36.8% in Alabama, 36.7% in Maryland, 36.6% in Mississippi and 36.2% in Connecticut. In the states with the most segregated schools for Hispanics, the percentages of Hispanic students in schools where minorities make up 90% to 100% of the student bodies are 58.1% in New York, 44.4% in New Jersey, 41.7% in Texas, 35.4% in California, 33.7% each in Illinois and Connecticut, 28.0% in Florida, 27.4% in Pennsylvania, 19.6% in Indiana, 18.3% in New Mexico and 16.2% in Arizona.

For many years, many communities—sometimes acting under court orders—attempted to end de facto segregation by BUSING black students to hitherto all-white school districts and vice versa, but parents of white students responded by sending their children to private schools, and black parents protested the long rides their children were forced to take to outlying white school districts. By the beginning of the 1999–2000 school year, busing as a vehicle for desegregation all but came to a halt across the United States, leaving many previously desegregated schools all but racially homogeneous.

De facto segregation of economic groups invariably produces lower educational quality in poor districts, where property values are low and yield inadequate property taxes to finance local schools. In contrast, the wealthiest white communities with high property taxes boast public schools that offer a level of education comparable to some of the most academically demanding private independent schools.

(See also AFRICAN AMERICANS; CIVIL RIGHTS ACT OF 1964; DESEGREGATION.)

Seguin, Edouard (1812–1880) French-born American physician who immigrated to the United States in 1850 and developed many of the first techniques for successfully teaching mentally retarded children. Seguin had studied under Jean-Marc-Gaspard Itard (1775–1838), the pioneer French military surgeon who specialized in disease of the ear and developed some of the first techniques for educating deaf-mutes and the mentally retarded. Itard was best known for his work *Rapports sur le sauvage de l’Aveyron* (1801), the story of his attempts to educate a boy found living wild in the forest. Itard insisted that the mentally retarded be treated medically and educationally rather than by imprisoning them as emissaries of the devil. Seguin brought his techniques to the United States in 1850 and strongly influenced the world’s educational leaders, including MARIA MONTESSORI.

selection aids for colleges and schools

Any of a wide variety of electronic or printed directories, catalogs, guides, brochures and profiles to help prospective candidates for colleges or private elementary and secondary schools choose institutions whose educational goals and policies most suit their individual needs. Independent publishers such as BARRON’S EDUCATIONAL SERIES, INC., of Hauppauge, New York and PETERSON’S Guides, Inc., of Princeton, New Jersey, are the largest producers of college directories available to the general pub-

lic in book stores, libraries and on the Internet. Both publish so-called PROFILES of a wide range of four-year colleges, universities and two-year colleges, and Peterson’s publishes a definitive catalog of profiles of independent secondary schools. The COLLEGE ENTRANCE EXAMINATION BOARD also publishes a widely used directory containing profiles of four-year colleges, while Wintergreen Orchard House, Inc., of New Orleans, Louisiana, publishes the comprehensive *College Admissions Data Handbook*, which contains the most comprehensive college profiles of any directory, but is so costly as to be available only through high school guidance offices and major public libraries. Other selection aids—either published, on CD-ROM or on Internet Web sites—are available directly from schools and colleges, which annually produce a plethora of profiles and histories of their institutions, along with videotapes and “virtual tours” of their campuses over the Internet.

Although published materials remain a common selection aid, applicants can search on-line databases for appropriate colleges and secondary schools over the Internet at Web sites of the College Board and the various publishers of college and secondary school profiles, as well as Web sites of individual colleges. The Web sites and a variety of CD-ROMS allow prospective applicants to enter the characteristics they most seek at their future schools or colleges. Each CD-ROM and Web site searches its database and calls up a list of schools that most fit the applicant’s descriptions, giving a complete profile of each, photographs of campus scenes, videos, locator maps, and even applications and financial aid forms. Interactive Web sites of selection-aid publishers, the College Board and the colleges themselves allow students to obtain detailed information about any department or cocurricular activity.

Selective Service Qualification Test A standardized verbal and mathematics aptitude

test administered by the United States Selective Service System to college and university students from 1951 to 1963 and in 1966 and 1967 to determine whether or not to grant temporary student deferments from universal military conscription. Students who obtained high enough scores on the test and were maintaining passing grades at colleges were usually granted the privilege of completing their work for undergraduate and some professional degrees before being drafted into the armed services.

Although the Selective Service Qualification Test was ridiculed as a relatively undemanding measure of academic skills, it produced a storm of controversy in public education in 1963, when, among the half-million male college students who took the test, education majors scored the lowest. The findings confirmed those of James Koerner's study of teacher education: By all standards, students in teacher education training programs were the least able academically.

(See also **TEACHER EDUCATION.**)

Selective Service System (SSS) The U.S. government organization charged with administering universal military conscription. Created by Congress in May 1917 under the Selective Service Act of 1917, the SSS was abolished after the end of World War I in 1918 but was restored in 1940. It remains in existence to this day, although its role has varied in the decades since 1940, depending on the United States military situation. Charged with registering and inducting all physically and mentally able men within 60 days of their eighteenth birthdays, the laws that determined SSS policies directly affected higher education in the United States during World Wars I and II and, beginning in 1951, during the Korean War, when college students were granted deferments from service to complete their undergraduate and professional graduate educations. At the peak of the Vietnam War, it became evi-

dent that the college deferment was shielding from military service a disproportionately high number of white, advantaged young men, while a disproportionately high number of poor, black youths were being drafted. Student deferments were abolished in 1971, but, with the end of U.S. involvement in the Vietnam War, the draft itself ended in 1973, and an all-volunteer military took its place. Mandatory SSS registration of all 18-year-old men was reinstated in 1980, but not compulsory military service.

self-actualization The ultimate level of human fulfillment under Abraham Maslow's "Hierarchy of Needs," which he described in "A Theory of Human Motivation." In simplest terms, the theory lists five basic, hierarchal needs in human behavior, each of which must be fulfilled before the individual can progress to the fulfillment of the needs at the next level. The first hierarchy of needs is physiological (food, drink, air, etc.); the second, safety (shelter, etc.); the third, belongingness and love; the fourth, esteem (achievement, prestige, status, etc.); and the fifth, self-actualization, or the fulfillment of the person's complete potential. Maslow defined self-actualization as a person being true to his or her own nature. "What a man can be, he must be" to fulfill the needs of self-actualization. Maslow's theory has had widespread direct and indirect influence on modern education to this day, with most schools aware of helping students fulfill each hierarchy of needs, including adequate food, at the lowest level, with the school breakfast and lunch programs.

(See also **NEEDS HIERARCHY.**)

self-concept (self-esteem) A controversial educational goal based on improving an individual's perception and evaluation of himself or herself. There is little debate among psychologists or teachers that a student's judgment of

his or her own worth can affect the student's work in school and, indeed, the student's entire social life in and out of school, at home and in the broader community. The debate revolving around self-esteem is whether it should be the focus of all educational efforts in the elementary school years. Some educators believe that students acquire self-esteem by learning such concepts as "black is beautiful," "I love myself" and other *nostra* from popular curricula that minimize academics. Others insist that students develop more self-esteem through tangible, often difficult accomplishments with a traditional curriculum that emphasizes competency and skill development in language, mathematics, science, music, art and other academic areas. The debate, in other words, centers on whether self-esteem results from "who I am" or "what I can do" and whether skills and competency—"what I can do"—eventually form the core of "who I am."

The self-esteem movement began in the 1980s, with teachers in many public schools praising student accomplishments so indiscriminately that such praise became meaningless. Teachers admitted accepting inadequate work "because there is the fear that kids will not feel good." Some teachers praised students simply for turning in homework, regardless of quality. In some New Mexico schools, the self-esteem movement lifted two-thirds of all students into the honors category. Supporting the self-esteem movement were publishers, who produced a mass of textbooks and tests with such titles as *All About Me* and *We Applaud Ourselves*, and chapters headed "What I Like to Eat," "What I Like to Watch on TV," "What I Want for a Present" and "Where I Want to Go on Vacation."

Critics of the self-esteem movement maintain that teachers who create learning activities in which all children discover that by working hard they can succeed, generally build far more self-esteem in their students than teachers who

simply teach children a series of "feel-good" *nostra*. Lessons that allow children to connect what they do with what they learn (e.g., cutting a piece of wood in half gives two halves, $1/2 + 1/2 = 1$, and 1 divided by 2 = $1/2$) give children a sense of control over the learning situation. They thus learn that hard work produces tangible, rewarding results, including a sense of self-esteem born of the acquisition of control over a body of knowledge.

self-contained classroom The standard preschool and elementary school classroom, where students from a single grade remain for most or all of the school day under the direction of a generalist teacher who is able to offer instruction in reading, writing, arithmetic, science, history and other subjects and schedule instruction in each as flexibly as student needs dictate. When necessary, specialized resource teachers may be brought into the classroom to teach foreign languages, music, art, dance or drama, although students in some schools leave their own classroom to go to specially equipped art, music and drama studios for lessons in those subjects. The advantage of the self-contained classroom is that the teacher gets to know each student more intimately (and vice versa) and can provide individual attention and remedial work when required, while allowing more gifted students to progress at their own pace. From the young child's point of view, the self-contained classroom and the single, all-day teacher provide a sense of security—of having a "home" away from home with a surrogate parent.

self-education The acquisition of skills and knowledge from books and observation, without the intervention of formal instruction in a school or from professional teachers. Until the early 20th century, self-education was the primary source of instruction in North America. In the early colonial era, except for wealthy children

destined to enter the clergy or the higher echelons of government service, few children continued their education beyond the common school age of about seven. However, "Poor Richard," in Benjamin Franklin's widely read annual, *Poor Richard's Almanack*, taught that "the doors of wisdom are never shut," and he made it clear that the greatest profits accrued to those who learned most diligently and continued their education on their own. After only two years of school, Franklin himself began a life of self-education, reading virtually every available tome of didactic literature. His belief in self-education spurred his publishing career, which provided the general public with endless periodicals, tracts, pamphlets, booklets and books from which they could study everything from literature to the latest agricultural techniques. He called his *Poor Richard's Almanack* "a proper vehicle for conveying instruction among the common people, who bought scarce any other books." Nearly 10,000 copies were sold annually.

Dozens of other publishers did much the same, producing a tidal wave of printed matter that flooded the colonies and provided the vast majority of American education for more than a century. By 1762, there were about 40 presses across the 13 colonies, with at least one in each of them. Between 1689 and 1783, some 80,000 to 100,000 titles were printed, including broadsides, almanacs, newspapers, magazines, tracts, pamphlets, primers, manuals, textbooks and ordinary books. Virtually every press had an almanac, many producing 60,000 copies a year; although they were popular and often helpful, they were not nearly as practical as the series of self-help booklets that began appearing in the 1730s. Among them were *The Young Secretary Guide*, *A Speedy Help to Learning*, *The Poor Man's Help*, *The Instruction*, or *Young Man's Companion*, and, eventually, the all-encompassing *The American Instructor*, a veritable encyclopedia for ambitious young tradesmen. It taught proper English, a broad overview of useful cul-

tural knowledge, such as history, geography and astronomy, handwriting, familiar form letters (both social and commercial), elements of arithmetic and bookkeeping, basic shipping documents in commerce, principles of carpentry, of joinery and of bricklaying, basic legal documents, hints on gardening and preserving, value of currencies and the treatment of disease.

The emergence of subscription LIBRARIES also spurred the growth of self-education. Again, Franklin promoted their growth, starting the first such library in Philadelphia in 1731. Over the next 15 years, three more libraries opened in Philadelphia, while Germantown, Lancaster, Trenton, New York, Connecticut and Newport, Rhode Island, also supported libraries based on the Franklin model and designed to foster self-education.

The self-education movement remained strong throughout the 19th century as the only source of instruction and self-improvement for the average person. Although 42% of American children between the ages of five and 19 went to school by 1850, fewer than 1% remained in school beyond the age of seven. Most went to work in the fields, mines and factories. Only 2% of 17-year-olds graduated from high school in 1770, and they were mostly advantaged children in private schools. Even by 1900, only 6.4% of American 17-year-olds graduated from high schools and one-third of those attended private schools. The vast majority of children and adults, therefore, were entirely reliant on self-education to improve their intellectual and economic circumstances. Most relied on periodicals and books, and some turned to a variety of self-help organizations such as the LYCEUM, founded in 1826 as a mutual, self-help association of adults to promote self-study and self-improvement. The Lyceum movement spread across the nation—as did the Chautauqua movement which began in 1874 as a program to train Sunday School teachers (see CHAUTAUQUA LITERARY AND SCIENTIFIC CIRCLE)—

but the Lyceum soon evolved into a traveling lecture series by some of the nation's most celebrated thinkers, who brought education and a taste of culture to millions of Americans.

With the gradual enactment and enforcement of universal public education laws in the early 20th century, self-education declined somewhat, although autodidacts such as Thomas Edison remained familiar and often towering figures on the American scene. Radio spurred new enthusiasm for self-education, combining the dissemination of knowledge and entertainment into every American home. Adding to the rebirth of self-education was the publication of a variety of encyclopedias and collections of "Great Books," which seemed to offer every less-than-educated American a guaranteed path to knowledge and success. The end of World War II brought strict enforcement of universal public education and, by the beginning of the 21st century, nearly 89% of American children were graduating from high school. Full-time schooling, however, did not quench American thirst for self-education. As book publishers began producing thousands of popular "how-to" books on arts and crafts, more than 250 stations began beaming EDUCATIONAL TELEVISION into American homes, including a wide mix of culturally enriching programs, ranging from formal courses for high school or college credits to entertaining programs that taught preschoolers to read, write and calculate. The mix of educational television now includes public affairs programs, live theater, classic films, concerts, dance recitals, culinary demonstrations, historical documentaries and a wide range of science programs. In addition to publishing and television, the beginning of the 21st century saw the Internet spawn a huge new form of education—"DISTANCE LEARNING" via home computers, with more than 5,000 colleges and universities across the United States and, indeed, the world, beaming thousands of formal academic and vocational courses to autodidacts across the Internet.

self-fulfilling prophecy A meritless, bias-based prediction whose eventual fulfillment stems from the motivation of the prophesier to prove his or her prediction or bias true. In American public education, the most evident self-fulfilling prophecy is the so-called TRACKING system, which groups high school children according to academic ability, with the least gifted on the general track, the manually skilled on the vocational track and the academically oriented on the college-preparatory track. Both teachers and students on the general track, for example, often have such low initial expectations about student performance that neither group is motivated to excel. Teachers present a variety of unchallenging "personal improvement" courses requiring no student skills or learning effort, and students, recognizing the low teacher expectations and low esteem in which they are held, drop out of school in staggeringly large proportions. Indeed, 63.5% of general education students—more than 2 million students—drop out of high school every year, and they account for about two-thirds of all American high school dropouts.

However, self-fulfilling prophecies are evident in every classroom of almost every school in the world. Teachers who believe youngsters to be slow, average or bright, and treat them on the basis of such premature evaluations, generally motivate such youngsters to fulfill their teachers' expectations. Some psychologists and educators believe the below-average academic performances of poor children and, most especially, poor black and Hispanic children, is partly a result of self-fulfilling prophecies based on low teacher expectations for members of those groups. One experiment with first and second graders found that I.Q. scores of randomly selected students presented to their teachers as "gifted" at the beginning of the school year increased an average of 15 points by the end of the year, regardless of race or ethnic background and

regardless of their actual I.Q. scores. Mexican-American children, who, because of their economic status and ethnicity, might otherwise have faced low teacher expectations for success, showed the greatest gains after teacher expectations were raised. Students identified for teachers as average—including some students who were in fact gifted—showed no increase in I.Q. scores. The study is not considered definitive because the findings were not sustained with students in grades 3–6, where I.Q. scores remained relatively stable, regardless of teacher expectations.

Thwarting the perpetuation of self-fulfilling prophecies has proved one of the most difficult tasks of educational communities in almost every nation in the world. Teacher sensitivity training and institutional control of classes have produced limited success in combating this problem.

semantics The study of the meaning and significance of words. Though complex at the university graduate school level, semantics are nevertheless an integral part of early education, especially as children learn to integrate reading and writing with actual stories. Several instructional techniques are available for teaching semantics:

- Semantic differential technique. A method for displaying the degree of difference in individual perceptions of the meaning of the same word. Usually used to demonstrate the meanings of modifiers, such as adjectives and adverbs, the semantic differential technique asks students to demonstrate the degree of their feelings about a stimulus on a scale of opposites:

Scrooge (stimulus)
Good—————Bad

The technique demonstrates the imperfect nature of word meanings.

- Semantic mapping. A graphic method of vocabulary building based on tying as many words as possible to a central concept or core word. Thus, the concept “energy” might be written on the chalkboard as a hublike circle, from which an array of spokes reaches out to lists of various characteristics that describe, detail and explain energy. One spoke, for example, might lead to a list of energy sources, another to energy types, another to uses, another to energy products, another to benefits and still another to dangers. At one and the same time, the technique not only expands vocabulary but also serves as an important teaching technique in the study of objects, animals and concepts.
- Semantic webbing. A more complex variation of semantic mapping that demonstrates the interrelationships between each of the objects and concepts on a map. A semantic web ties the core object or concept—sun, for example—with specifically identified spokes, such as heat, leading to any number of results, such as plant growth and human survival. In addition, each result is connected to or separated from the others depending on their interrelationships. Plant growth, for example, is also essential to human survival, although the reverse is obviously not true. The web would indicate this.

semester One-half of an academic year, usually lasting 15 to 18 weeks. Derived from the Latin *semestris*, or half-yearly, and, in turn, from the Latin *sex* (six) + *mensis* (month), the semester is the most commonly used division of the academic calendar in American colleges and universities.

seminar In education, a meeting of students with a teacher, for a round-table discussion and exchange of ideas about a specific topic, usually proposed by the teacher. Acting as a moderator, the teacher poses questions and stimulates student discussion, with the object of promoting deeper and more thorough understanding of the topic by the entire group. Once limited to colleges and graduate schools,

the seminar method has become common at academically demanding secondary schools. At the university level, the seminar often sees students who have done original research compare, exchange and discuss their results and conclusions with their colleagues. The term is derived from the Latin *semen*, or seed, and indeed, the seminary took its name as a seedbed of knowledge, although it now refers exclusively to theological schools. When first introduced in 19th-century German universities, the seminar represented a sharp departure from the scholastic lecture that accommodated no discussion or questioning of the professor. A small number of German-trained teachers brought the seminar to American colleges after the Civil War. The seminar is said to have made its first appearance in the United States at the University of Michigan in 1869, with Harvard, Johns Hopkins and Clark Universities adopting the approach by the end of the century.

seminary Literally, a “seedbed” of knowledge and once used to describe theological schools and advanced schools for women. Now used exclusively as a theological school.

semi-professions A vague term coined by sociologist Amitai Etzioni, in his book *The Semi-Professions and Their Organizations: Teachers, Nurses, Social Workers* (1969). It is generally used to refer to all those occupations other than the three “learned professions”—theology, medicine and law—that were once accessible with only a high school diploma but now require some college, a college degree or even postgraduate education. A profession was originally a vow made upon entering a religious order. The term was later applied to medicine when, upon completion of their studies, graduates took the Oath of Hippocrates, to serve the sick and “cure your patients.” Service in the law in the United States also requires an oath,

namely to defend the Constitution and uphold the law as an officer of the court. Although there are other occupations that require as much education as theology, medicine and law, few, if any, require both extensive graduate education and the profession of an oath.

In recent years, however, many occupations that formerly required no education began requiring two or more years of college training, a phenomenon that sociologist Harold L. Wilensky called “the professionalization of everyone.” Study for dentistry, optometry, business, engineering, journalism, accounting, teaching and nursing all gradually moved into postsecondary education during the first half of the 20th century, while the post-World War II years saw study for corrections, hotel management, hospital administration, undertaking and other vocations move to associate, bachelor’s and even master’s degree programs.

In many cases, however, the added education and training did not necessarily lift remuneration to levels that rewarded the years of preparation. The result was unionization in a wide range of new “professions,” including teaching, nursing and corrections. Unionization meant labor-management bargaining and strikes, which, in turn, led to the dilution of collegiality and conflicting allegiances to both a profession and organized labor. These conflicting allegiances generated the term *semi-profession*.

senior In education, a student in his or her final year of high school or college.

senior high school In the United States, the last four years—i.e., grades 9, 10, 11 and 12—of the six years of secondary education. Originally, senior high school followed two years of junior high school (grades 7 and 8), but the development of the MIDDLE SCHOOL, often incorporating grades 7, 8 and 9, has left some high schools with only three years of

study. Regardless of the number of grades, the successful completion of senior high school culminates in the award of a diploma attesting to the student's graduation.

sensitivity training A professionally directed form of group therapy for providing participants with a better understanding of how to interact with others in the most respectful, productive ways. Designed to give participants a measure of self-understanding, sensitivity training probes the reasons for each participant's insensitivity toward others and, more to the point in education, toward individual students or classmates, toward religious, racial or ethnic groups and toward the opposite gender. Based on traditional group therapy methods, sensitivity training follows no formal pattern or procedure. Led by a professional "trainer"—i.e., a psychiatrist, psychologist, social worker or counselor—sensitivity training may be an intensive daylong, multiday or weeklong project or a once- or twice-weekly meeting for an hour or more over an extended period. Through active communication within the group, sensitivity training seeks to promote an understanding and perhaps elimination of mutual antipathetical feelings of participants. The process also tries to teach participants new techniques of relating to each other.

separate-but-equal doctrine Until 1954, a legally enforced principle, throughout the American South and elsewhere, that segregated all African Americans and American Indians from whites in separate public facilities, including schools. The separate-but-equal doctrine represented a massive southern rebellion against post-Civil War RECONSTRUCTION. During the Reconstruction Era, Congress passed the Fifteenth Amendment to the Constitution, giving all citizens the right to vote and stripping states of the power to deny such rights on the basis of race, color or previous condition of servitude.

Within the framework of Reconstruction, public education generally and African-American education specifically spread throughout the South for the first time in history.

When the South returned to self-rule in 1870, however, most southern states reimposed tight restrictions on African Americans. Using every device, from discriminatory taxes to terrorism, the states gradually deprived blacks of both the right to vote and the right to a minimal education. By 1874, white supremacy was reestablished throughout the South, and schools and all other public facilities were segregated along racial lines—ostensibly separate but equal. In 1890, Louisiana made the separate-but-equal doctrine state law. Two years later, authorities arrested Homer A. Plessy, an African American who refused to leave a passenger car reserved for whites. Charging a violation of his Fourteenth Amendment rights, Plessy took the case to the U.S. Supreme Court, which in 1896 upheld the separate-but-equal doctrine. It was not until 1954, in *BROWN V. BOARD OF EDUCATION OF TOPEKA*, that the Court reversed itself and ruled the separate-but-equal doctrine unconstitutional, saying that any separation of the races in school produced inherently unequal education.

(See also AFRICAN AMERICANS; CIVIL RIGHTS ACT OF 1964; DESEGREGATION; *PLESSY V. FERGUSON*; SEGREGATION.)

separation anxieties A child's irrational fears of separation from or abandonment by its parents. Not uncommon among young children attending preschool or kindergarten for the first time, separation anxieties usually provoke mysterious aches and other physical symptoms that preclude the child's leaving home and attending school. Often such symptoms escalate to include nausea, diarrhea, stomach pains, migraine headaches and other serious illnesses. At a later age, separation anxieties may trigger rebelliousness, including running away or refusal to attend or remain in school. Persis-

tent separation anxieties may require professional psychiatric help. Often, however, such anxieties may be relieved by the parent simply escorting the child to school for a few days and, with the teacher's permission, spending a few moments in the classroom until formal activities get under way. Separation anxieties often reappear when students must make the transition from elementary to secondary school, when once again children find themselves smallest and youngest at a new school and where they must be independent and find their way from class to class. Lost is the security of a single teacher in a single, all-day classroom. Some anxiety is an inevitable result, but its debilitating effects can be mitigated by frequent preliminary visits to the new school so that students can learn, in advance, what to expect.

(See also SCHOOL PHOBIA.)

Serrano v. Priest A landmark California Supreme Court decision in 1971 that ruled that the financing of public schools with property taxes discriminated against the poor and thus violated their constitutional guarantee of equal protection under the law. The court said that taxes based on elevated property values in wealthier, sparsely settled districts produced far better public education and more dollar support per pupil than taxes in poor, overcrowded districts, where property values were low and generated less revenue. The California decision was significant in that it marked the first time that a state declared unconstitutional the traditional system of financing public education with property taxes. In the 25 years that followed, courts in more than 30 states made similar rulings, and Michigan actually outlawed the use of property taxes for financing public schools, choosing instead to finance each public school with state funds, on an equitable, per-capita basis.

Ironically, three years after *Serrano*, the U.S. Supreme Court upheld the right of states

to finance public school systems with local property taxes in another case, *SAN ANTONIO SCHOOL DISTRICT v. RODRIGUEZ*. In the 1974 case, the Rodriguez parents filed suit against the state of Texas, claiming that property taxes in San Antonio provided only \$26 per pupil for schools in poor districts, compared with \$333 per pupil in wealthy districts. The plaintiffs argued that such inequity violated the U.S. Constitution's guarantee of equal protection under the law. The Supreme Court, however, ruled that the U.S. Constitution makes no mention of education and offers no specific guarantee of any right to education. "Education . . . is not among the rights afforded explicit protection under our federal constitution. Nor do we find any basis for saying it is implicitly so protected." The Court also said that the plaintiffs had failed to prove that disparities in funding had deprived their children of an "opportunity to acquire minimum basic skills necessary for the full enjoyment of rights of free speech and full participation in the political process." Despite the Court's ruling, more than 30 states have used California's *Serrano* ruling to disassociate public school financing from property taxes, because education is indeed among the rights afforded explicit protection under their state constitutions.

Servicemen's Opportunity Colleges (SOC)

A network of more than 300 community colleges, four-year colleges and universities that provide programs of higher education designed to meet the special needs of men and women in the U.S. armed forces. An outgrowth of a 1970 project to serve the educational needs of returning Vietnam War service personnel, SOC was founded by the American Association of Community and Junior Colleges, whose members offered lower-level college courses on or near military bases and developed nontraditional methods of instruction to accommodate the unpredictable work schedules of active

servicemen and women. Funded since 1972 by the Carnegie Corporation of New York and since 1976 by the U.S. Department of Defense, SOC expanded its offerings to include four-year college programs in 1973, when the American Association of State Colleges and Universities and 10 other higher-education associations joined SOC. In addition to its educational programs, SOC also acts as a coordinator to ensure that SOC course credits are transferred to other institutions of higher education when service personnel leave the military and pursue higher education.

service scholarship An unusual type of partial- or full-tuition merit scholarship awarded at a limited number of colleges to students of high academic standing who agree to perform at least 10 hours a week of community public service work. Often offered at religious colleges such as Xavier University, in Cincinnati, which sees public service training as part of its mission, the program is popular at some secular schools such as Hampshire College, in Amherst, Massachusetts.

Sesame Street The first—and perhaps the most remarkably effective—program to emerge from American educational television for preschool children. A production of Children’s Television Workshop, *Sesame Street* first appeared on public television stations in 1969. Financed by the Carnegie Corporation of New York, the Ford Foundation and the federal government, *Sesame Street* was designed for preschool children generally, but most especially for disadvantaged preschoolers who lacked family stability and the economic wherewithal for preschool education. In effect, *Sesame Street*’s actors and puppets, costumed as loving and lovable characters such as the “cookie monster,” brought preschool education into the home of even the poorest, most culturally deprived child, providing READING-READINESS

and math-readiness skills in the exciting, attention-getting, staccato rhythms of television commercials. *Sesame Street* reached 90% of preschoolers in city slums, and studies proved that it not only improved the reading readiness of economically deprived children across the United States, it also succeeded in producing measurable educational gains for middle- and upper-income children.

set induction Educational jargon equivalent to the show business term *warm-up*—the cultivation of audience (or student) receptiveness for a forthcoming unit of particularly complex work, a new concept, a field trip or any other variation of the usual classroom routine. Designed to avoid the shock of abrupt advances into new, unknown academic territory, set induction is designed to produce a smooth, gradual transition. It relies on careful teacher preparation, tying the new work to the old, and patient discussion with students to allay concerns and anxieties.

Seton, Saint Elizabeth Ann (1744–1821) American educator and philanthropist who founded the Roman Catholic school system in the United States. Born Elizabeth Ann Bayley in New York City, she married William M. Seton, a successful merchant, in 1794, and concerned herself with charitable causes. In 1797, she helped found the Society for Relief of Poor Widows with Small Children, New York’s first charitable organization. Mother of five, she traveled with her husband to Italy, where he died in 1803. She returned to the United States, converted to Catholicism and in 1809 opened the first parochial free school in the United States—a Catholic elementary school in Baltimore. In the year that followed, she and four nuns organized the Sisters of St. Joseph (later, the Sisters of Charity of St. Joseph), the first such order in the United States. Later, they founded the St. Joseph College for Women,

where, as superior of the community, she spent the remainder of her life teaching and helping to found 20 other similar educational communities. In 1856, Seton Hall College (now University) in New Jersey was named in her honor, and in 1975 she became the first American-born Roman Catholic to be canonized.

set theory The core of so-called new math, which bases mathematics instruction on recapitulation of its evolution, rather than rote memorization of empirical formulae. Dispensing with numbers, set theory groups all classes of objects, or elements, with common characteristics into sets—cars, insects, Americans, months in a year. Sets may contain no elements (a null set), a few elements, many elements or an infinite number of elements and be larger, smaller or the same as other sets. Sets may also contain subsets—station wagons are a subset of automobiles, for example, and ants are a subset of insects—and they may be subsets of other sets, as cars are a subset of vehicles. Sets may be related to other sets in unions or partial unions. Instead of relying on numbers to describe such relationships, teachers use easy-to-understand graphic depictions, such as circle A lying within circle B (a union), or circle A partially intersecting circle B, creating a common shaded area, to indicate a partial union.

Set theory was introduced into primary and secondary school mathematics instruction in the late 1950s and early 1960s, to expand student understanding of mathematics by teaching the concepts of the origin and structure of mathematics rather than limiting the emphasis to computation based on memorization. In simplest terms, set theory, for example, is rooted to a preliterate, premathematical era, when humans had not yet invented reading, writing or numbers and, therefore, could not count. Presumably they could, however, distinguish the differences between “sets”—i.e., more than, less than or same as. Consider the classic case of

the shepherd in a cave with a “set” of goats he releases to graze each morning. As each goat leaves, the shepherd moves a pebble from one side of the cave’s entrance to the other, creating a set of pebbles that corresponds numerically to the set of goats in the field. As the goats return, he reverses the process. If the entire set of goats has not returned at dusk, a subset of pebbles is left equal to the subset of missing goats.

In concentrating on the teaching of such abstract mathematical concepts as sets and subsets, equal and equivalent, many teachers failed to give their students the practical arithmetic tools essential for daily life, such as counting correctly and knowing from memory the change due when paying for a 67-cent item with a dollar bill. Insisting that such practical aspects of mathematics would develop as a logical outgrowth of new math, zealots had imposed new math as the standard in elementary schools across the United States by the late 1960s. When, however, the mathematics proficiency of American students showed a dramatic decline in the 1970s, parents and educational reformers demanded a return to traditional instruction. The result was a compromise curriculum in which students, once again, were taught to memorize the multiplication tables and other tools of arithmetic, but were nevertheless taught a modicum of set theory to improve their understanding of the broader concepts on which mathematics is based.

Seven Sisters colleges A relatively obsolete term referring to Barnard, Bryn Mawr, Mount Holyoke, Radcliffe, Smith, Vassar and Wellesley Colleges, all of them founded as women’s colleges in the 1800s, when men’s Colleges refused to admit women. Although unaffiliated in any formal way, the seven colleges maintained a close working relationship, comparing admission policies and curricular offerings. By the mid-1990s, however, only Mount Holyoke (the first women’s college in the world), Smith

and Wellesley remained exclusively women's schools, with no direct ties to men's colleges. Although still a women's college, Barnard was directly affiliated with COLUMBIA University from its founding. Radcliffe, always a college of Harvard University, has merged with HARVARD COLLEGE. Vassar is coeducational, and Bryn Mawr has long enrolled a handful of male students and maintained cooperative ties to Swarthmore and Haverford colleges, allowing students at each college to cross-register in courses at the other two colleges.

Seward, William H. (1801–1872) Whig governor of New York State from 1839 to 1843, and an unsuccessful advocate of state support for religious schools and multilingual education in public schools. Better known for his later roles as a senator, as U.S. secretary of state in the Lincoln administration and for his acquisition of Alaska in the Johnson administration, Seward was nonetheless an important governor and, as such, a major influence in the development of public education in New York State. At the time of his accession, New York State politics were dominated by a controversy over state support of religious schools. Prior to 1825, the state had subsidized all schooling within its boundaries, including all denominational schools. In 1825, however, New York City's Common Council voted to restrict its share of school subsidies to nondenominational schools. The move provoked strong protests from the growing number of Roman Catholic schools, whose leaders contended, persuasively, that so-called nondenominational public, or common, schools were, in fact, Protestant (which indeed they were).

Seward not only sided with the Catholic position, he recommended in his inaugural address that immigrant groups be permitted to operate their own state-subsidized public schools, administered and taught by teachers of their own language and religion. "The chil-

dren of foreigners," he declared, "are too often deprived of the advantages of our system of public education. . . . I do not hesitate, therefore, to recommend the establishment of schools in which they may be instructed by teachers speaking the same language with themselves and professing the same faith."

The controversy raged at public meetings and in the press until 1841, when the council rejected the Catholic petition for public funds and the entire idea of multilingual, multicultural education. The defeat of the proposal spurred the growth of Roman Catholic parochial and diocesan schools, as well as denominational schools of other religions and of many national groups. Support for Seward's concept would not reemerge until more than a century later, when BILINGUAL EDUCATION and MULTICULTURAL EDUCATION were introduced into public schools in Hispanic neighborhoods of New York, Los Angeles, Miami and other major American cities.

sex education A broad-based, highly controversial and widely varying elementary and secondary school curriculum introduced in the late 1960s to provide instruction about human reproduction and the physical, emotional, psychological and social aspects and consequences of human sexuality and sexual behavior. Banned in many schools, the coverage and depth of sex education varies according to community sentiment. At one end of the spectrum, sex education may be limited to a chapter in a high school biology text containing an empirical study of the human reproductive system. At the other extreme, it may be a comprehensive curriculum, beginning in kindergarten and continuing through elementary, middle school and high school, as part of a broad health-education program. At each stage of such a broad-based study, youngsters are taught to understand their own physical, psychological, emotional and social development and urges. Depending

on the age group, explicit information—sometimes subtle, sometimes graphic—is offered on the wide variety of sexual practices, love and the emotions, the reproductive process, contraception, venereal infections and hygiene. A major thrust of most such programs is to try to teach students to make responsible decisions about sexual contact.

Even in the most accepting communities, however, sex education is seldom free of controversy. Many parents and educators believe strongly that sex education represents a usurpation of parental prerogatives by the state and that schools should limit their instruction to the arts and sciences. Still other critics maintain that most sex-education teachers are not adequately trained or emotionally prepared to deal with preadolescent and adolescent sexuality. And other critics charge that sex education often crosses the line into therapy, for which teachers are certainly untrained and ill-equipped.

Proponents of sex education insist that the opportunities for premature sexual activity in an increasingly promiscuous society make it essential to equip youngsters with adequate knowledge and social skills to act responsibly. Proponents of sex education, however, are themselves involved in heated debates over what sex education should teach. Those in favor of the broadest possible education rely on such explicitly illustrated publications as *Learning about Family Life* (Rutgers University Press, 1993) to teach five-to-eight-year-olds that “when a woman and a man who love each other go to bed, they like to hug and kiss. Sometimes, if they want to, the man puts his penis in the woman’s vagina and that feels really good for both of them. Sperm come out through the man’s penis. If one tiny sperm meets a tiny egg inside the woman’s body, a baby is started.” Other titles in the series include *Uncle Seth Has HIV*, *Learning about Our Genital Parts* and *Talking about Touches*, which urges that masturbation be done in private. A New

York City sex education program called “The Rainbow Curriculum” promotes tolerance for homosexuality and other types of unconventional sexual behavior.

Such explicit sexual education has come under fire not only from religious and parental organizations but also from many child psychologists who maintain that premature lessons on sexuality—especially in the classroom arena before the eyes of peers and teachers—often frighten young children and produce serious anxieties about sex and their bodies. As in every other sector, children have different and highly individualized rates of development in the area of sexual curiosity. Critics of school-based sex education maintain that a child’s interest in sexual matters is usually best satisfied as the child’s own curiosity provokes a question to a parent in the quiet, secure privacy of the home.

In the early 1990s, growing concern that explicit sex education in public schools had provoked a dramatic increase in teenage pregnancy rates led to federal and state legislation to promote programs that substituted the teaching of abstinence for comprehensive sex education and discussions of birth control. By 2000, one-third of American public school districts had switched to abstinence-only sex education, with 55% of the districts in the South doing so and only 5% offering comprehensive sex education programs. A majority of schools in the United States urged students to delay intercourse until marriage and to use birth control and practice safe sex if they did not. More than 95% of public school sex education programs discussed AIDS and other sexually transmitted diseases, but only 45% offered information on where to get birth control products and only 39% offered information on how to use them. Only 37% mentioned abortion and only 36% discussed sexual orientation. Although there were no studies to link changes in sex education with rates of teenage pregnancy, the late 1990s saw a

20% drop in such pregnancies (along with other high-risk behavior by teenagers). By the end of 1998, teenage pregnancy rates had reached their lowest levels in 40 years—42 births per 1,000 teenagers, compared to 82 in 1960. Teenage pregnancy rates among African-American girls fell from about 160 per 1,000 to about 80, while the rate for white girls dropped from 80 to just over 40 per 1,000.

Equally controversial as the teaching of explicit heterosexual behavior has been the question of teaching children about homosexuality. The growth of the gay/lesbian liberation movement provoked demands that homosexuality be included as part of the normal sex-education curriculum. Equally vocal opponents maintain that discussion of homosexuality has no place in the classroom, but, if mentioned, it should be described as aberrant and immoral.

(See also SIECUS.)

sexism Any gender-oriented, discriminatory attitude, belief or behavior. Since the founding of the first school in the Americas, education has continually reflected the sexist attitudes of a society that denied women access to college-level education until 1836 and the right to vote until 1919. Although the CIVIL RIGHTS ACT OF 1964 banned overt discrimination of all kinds on the basis of gender *inter alia*, sexism continued to permeate education at all levels. Until recently, myriad books perpetuated stereotyped women as the weaker sex, destined by nature to be dominated by men, to fulfill specific vocational roles as secretaries, clerks, maids, nurses and elementary school teachers and to accept social roles such as mother and housewife. Moreover, the educational establishment reinforced such stereotypes. In 1920, 86% of the teachers in public elementary and secondary schools were females, while their administrative superiors—public school principals—were almost universally men. As late as 1990, women made up almost 72% of all public school teach-

ers but only 30% of public school principals. In addition, many schools continued to perpetuate curricular sexism, with girls steered into home economics courses and boys into industrial arts courses.

(See also GENDER DISCRIMINATION.)

sexual harassment Unwanted or unwelcome, sexually oriented, verbal or physical advances toward a member of the same or opposite sex. A perennial social problem in American secondary schools, sexual harassment ranges from sexual comments or suggestive looks to rape. Verbal abuse and ogling are by far the most frequent forms of sexual harassment, but touching, grabbing and pinching are not uncommon, along with intentionally brushing up against a student in a sexual way. Spreading sexual rumors about other students, pulling at a student's clothing, and showing or leaving sexual materials or messages represent still other common forms of sexual harassment at most schools. About 3% of American public schools report incidents of rape at school each year—about 4,000 incidents a year nationwide. Students initiate more than 80% of unwelcome sexual behavior at school, while teachers, custodians, coaches and other adults are responsible for the rest.

The mid-1990s saw the American Association of University Women launch a nationwide campaign to force American elementary and secondary schools to confront and correct the problem, and by the mid 2000s reports of sexual harassment dropped dramatically, with only 4% of high school students claiming to have experienced such behavior, compared with 25% a decade earlier. Apart from increased classroom discussions, another factor that may have provoked the decline was the increasingly aggressive use of court action against teachers, schools and school districts by parents of girls who had been harassed by other students. A California jury awarded \$500,000 to a sixth-

grade girl who had endured months of sexual harassment by a classmate. After the girl's teacher, the school principal and the school superintendent refused to respond to her parents' complaints, the family sued and won damages from the school district and the principal. In the wake of similar suits and judgments, schools have been quick to suspend students—some as young as six—for any behavior that suggests sexual harassment.

Shanker, Albert (1928–1997) Prominent American teachers' union leader and long-time president of the AMERICAN FEDERATION OF TEACHERS, AFL-CIO, whose membership he helped increase by more than 50%. A public school teacher in the 1950s, Shanker helped found the United Federation of Teachers, the New York City AFT local. After leading several strikes in the 1960s and serving time in jail for violating New York's collective bargaining statutes, he won major improvements in pay, health and welfare benefits, and job protection for both teacher and classroom paraprofessionals in New York City. Indeed, the contracts he won served as models for teacher contracts across the United States and spurred a mass shift in teacher allegiance from the National Education Association to the AFT. Fearful of losing too many teacher-members, the NEA evolved from a professional organization into a quasi-union.

In 1974, Shanker was elected head of the AFT, and in 1981 president of the International Federation of Free Teachers' Unions, headquartered in Brussels, Belgium. The author of a nationally syndicated column on education, Shanker was an outspoken supporter of reform of public education, urging teachers to assume the leadership role in effecting such reforms.

shared facilities and services A cooperative education program whereby two or more private or public schools each use some facilities of the other(s) on a regularly scheduled basis,

without charge. An effective money-saving mechanism, such programs allow the students of two or more institutions to use a single set of otherwise underutilized classrooms, laboratories, recreation sites, equipment and services, with a single common charge. Shared-facilities programs require students to be under the supervision of teachers or officials from their own school, while shared-services programs—the use of libraries, for example—do not. Shared-facilities and shared-services programs allow schools in the same or neighboring school districts to avoid the capital costs of building duplicate facilities.

shared time A cooperative program whereby private and parochial school students may simultaneously enroll in and receive full credit for specific public school courses unavailable at their own schools—laboratory or vocational courses, for example. Also known as dual enrollment, shared time is unrelated to RELEASED TIME, whereby public school students are excused from school to obtain religious education elsewhere.

Sheldon, Edward A. (1823–1897) American educator who founded the so-called Oswego Movement, which introduced the teaching methods of Swiss educator Johann Heinrich Pestalozzi to American education. Born and educated in upstate New York, Sheldon organized the Orphan and Free School Association of Oswego in 1848 to help educate poor, immigrant children arriving in Oswego, then a thriving manufacturing city on Lake Ontario. In 1851, he was appointed superintendent of schools in Syracuse, where, over the next two years, he organized the city's graded school system, night schools and public libraries. Returning to Oswego in 1853, he organized the city's public school system and, in 1861, the Oswego Primary Training School to fill the burgeoning demand for teachers. Introduced to Pestalozzian

teaching methods at a conference in Toronto, Canada, he brought two Pestalozzian experts from Europe to Oswego to help train students in Pestalozzian teaching techniques. The first institution in the United States to teach Pestalozzian methods, Sheldon's school was renamed the Oswego State Normal and Training School; during his 36 years of leadership, it became one of the most important teacher-training institutions in the United States. By 1867, six other normal schools based on the Oswego model had been established in New York State, and their teachers helped introduce Pestalozzian teaching methods in schools across the United States. Essentially, Sheldon stressed so-called object teaching, based on knowledge acquisition through observation and inquiry and the use of the five senses.

sheltered classroom A classroom for non-English-speaking students in which the teacher teaches only in English, using immersion techniques that literally flood students in English and force them to learn the language. Such classes are sheltered when the teacher uses a relatively limited, simple English vocabulary designed to make lessons easier for the students to understand.

sheltered workshop A usually nonprofit service or manufacturing enterprise that relies largely on physically, mentally or psychologically handicapped workers. Originally custodial institutions when first organized at the beginning of the 20th century, sheltered workshops now provide rehabilitative and training services to help the handicapped become independent, self-sufficient citizens. Workshop participants commute (sometimes independently, sometimes on workshop buses) to and from work. They usually receive minimum or piece-work wages for the services they provide or goods they produce. Most workshops provide such services as building or grounds maintenance

or engage in light manufacturing requiring relatively few worker skills, such as repairing and processing used clothing or manufacturing and packing candies.

Shelton v. Tucker A 1960 U.S. Supreme Court decision declaring unconstitutional a 1958 Arkansas law that required teachers to list all organizations to which they had belonged in the previous five years. Declaring the requirement an abridgement of constitutional rights to free association, the Court said the law was particularly egregious because of its unlimited scope. It required teachers to disclose church memberships, political affiliation and "every conceivable kind of associational tie—social, professional, avocational, or religious. Many such relationships could have no possible bearing upon the teacher's occupational competence or fitness." The law's "comprehensive interference with associational freedom," said the Court, "goes far beyond what might be justified in the exercise of the state's legitimate inquiry into the fitness and competency of its teachers. . . ."

shorthand Any system of rapid notation, using symbols or abbreviations to represent letters, words or phrases. All but rendered obsolete by electronic recording systems and computers, shorthand dates to ancient Rome and a system called *notae Tironianae* (Tironian notes), invented in 63 B.C. by the freedman Marcus Tullius Tiro. Taught in Roman schools, it was used to record speeches of statesmen and proceedings of the Senate and, later, church councils. It remained the primary form of shorthand for more than 1,000 years, when secret writing became associated with witchcraft and Latin had changed so radically as to render it all but useless.

The first modern system of shorthand was invented in 1588 by the English cleric Timothy Bright (1551?–1615). More than a dozen other systems were developed in England, with

Europe following suit in the late 17th century. The two most commonly used systems in recent times were developed by British educator and spelling reformer Sir Isaac Pitman (1813–97) in 1837 and by Irish stenographer John Robert Gregg (1867–1948) in 1888. Using symbols or combinations thereof for speech sounds, the two systems were introduced in the United States in 1852 and 1893, respectively, with the Gregg system eventually predominating. About 90% of shorthand instruction in the United States today is in the Gregg system.

In 1924, a radically new kind of shorthand was invented by American educator Emma Dearborn (d. 1937) and revised and improved in 1950 by educator Alexander Sheff (1898–1978). Called speedwriting, it used longhand letters instead of unfamiliar symbols to represent sounds and words. In addition to speedwriting, a third type of shorthand—machine shorthand—was developed in the late 19th century, using small, mechanical keyboards that permitted the imprinting of entire syllables with a single touch. Able to record 200 words a minute, compared to 120 words a minute for written shorthand and speedwriting, machine shorthand became the standard method of transcribing proceedings in courtrooms and government meeting rooms.

SIECUS (Sex Information and Education Council of the United States) A private, nonprofit organization founded in 1965 by MARY STEICHEN CALDERONE to introduce sex education as a standard element of the K–12 curriculum. The organization outlined a formal curriculum in its *Guidelines for Comprehensive Sexuality Education: Kindergarten–12th Grade*, published in 1991. In addition to promoting sex education and lobbying against efforts to restrict it, SIECUS provides professional training, technical assistance and materials for sex and health-education teachers, along with extensive, specialized materials for HIV/AIDS

education. SIECUS also maintains the most extensive library on sexuality and HIV/AIDS that is open to the public, and it produces a variety of publications for all age groups on sexuality, HIV/AIDS, sex education, sexual rights, contraception and other issues related to human sexuality.

sight reading Usually, a musical term referring to the singing or playing of a composition from its score at first sight. Sight reading can also refer to the translation of an unfamiliar passage into another language.

sight vocabulary A reading-instruction term referring to the totality of words a student is able to read unhesitatingly and understand without help from others or from reference materials.

sight word A reading term referring to any word that a student is able to recognize and read unhesitatingly, in its totality, by viewing its overall configuration rather than examining and “sounding out” its letters and syllables.

signing A form of communication that depends entirely on the use of finger, hand and arm positions and gestures to represent words, phrases or concepts. There are many signing methods, including Signed English, American Sign Language and FINGER SPELLING, all of them used primarily by the deaf or hearing impaired. The slow and cumbersome Signed English uses signs in English-language word order, while American Sign Language—the most common and, generally, the swiftest form of signing—has its own syntax that does not reproduce or represent a literal translation of English or any other language. For example, the sentences “People mislabel me as disabled. In fact, I am a member of American deaf culture” would be translated in nine signs meaning, respectively: disabled, people,

label me, wrong, true, me, American, deaf, culture.

silent reading Reading to oneself, without producing any sound or moving the tongue or lips. A relatively new technique of reading, in historic terms, silent reading contrasts with and has different purposes from oral reading, which is concerned with pronunciation, enunciation, voice control and communication. Until the early 20th century, students universally learned to read orally, because reading was the core of family recreation in the home before radio and television. As a result of eye-movement research just before World War I, silent reading was found to increase reading rates, reading comprehension and the ability to infer word meanings from their context. For several decades thereafter, silent reading replaced oral reading as the sole goal of reading instruction. More recently, however, most schools have taught both oral and silent reading, each of which provides students with different sets of essential skills.

Simon-Binet Scale A pioneering system for measuring human intelligence based on scores achieved in a series of problems of graded difficulty, each corresponding to a different mental level. Developed in 1905 by French psychologists ALFRED BINET and Theodore Simon, the Simon-Binet Scale was one of the first efforts to measure human intelligence using standardized tests. It inspired a massive effort by educators and psychologists in the United States to apply the concept of the SCALE to the measurement of intelligence, aptitude and achievement. Over the next 20 years, test-makers developed endless numbers of scales to measure every imaginable element of educational aptitude and achievement, including arithmetic, handwriting, spelling, drawing, reading, language ability, science skills, vocational skills and, of course, intelligence. In

1916, LEWIS M. TERMAN and his colleagues at Stanford University revised the Binet Scale, converting it into the STANFORD-BINET INTELLIGENCE TEST, a test for measuring what they called the INTELLIGENCE QUOTIENT, or relationship of an individual's mental and chronological ages.

simulation A basic method of instruction that reproduces real-life problems and situations under risk-free conditions in the classroom. Developed for all ages of elementary and secondary school instruction, simulation ranges from simple play-acting and role-playing in so-called SOCIODRAMAS to the use of highly technological equipment such as flight training cockpits. The development of computer-controlled "virtual-reality" devices has expanded the reach of simulation instruction to even the youngest students.

At the simplest level, simulation is used in substance abuse education, sex education and sensitivity training by asking participants to play a specific role in a classroom drama that simulates real-life situations in which students may be tempted by drugs, alcohol, premature sexual activity or participation in bullying or discriminating against other students. By recreating the situation in the classroom, students learn and practice decision-making and problem-solving techniques under teacher and counselor guidance. They can thus make "wrong" decisions risk-free, learn creative thinking habits and gain understanding of the complexity of real-life social problems and the consequences of each decision they make. So-called debriefing, or evaluation, of each simulative activity provides students with an overview of cause-effect-consequence sequences.

At a different level, mechanical simulation devices are used in a wide range of practical instruction such as driver-training and even in the use of motorized wheelchairs—again, in risk-free devices that reproduce real-life situa-

tions on a screen. In the classroom, computers are used to simulate a wide variety of real-life situations to reinforce formal instruction. Software in language laboratories can simulate real-life situations overseas, where students must use their knowledge of the language. Science computers can guide students through simulated laboratory experiments, while social studies computers can escort students through simulated, day-to-day living in societies past and present.

single-parent families Families in which only one parent lives in the home and is solely responsible for the day-to-day rearing of the children. Single-parent families may result from the death of or abandonment by the spouse, from divorce and from out-of-wedlock childbearing. About 21% of America's more than 80 million children (under 18 years old) live with a single parent (more than 80% with their mother). When last measured by the Department of Education, the educational achievement of students from single-parent families ranged from 3% to 6% below that of children from two-parent homes. However, the results may be skewed by other factors, such as the economic, social and cultural levels of single-parent homes, for which no breakdown in scores was provided. About 44.5% of the nearly 17 million children from single-parent homes are either black (28.5%) or Hispanic (16%) students, whose academic achievement ranks significantly below those of whites and, therefore, may have lowered the overall average of the group. As such, therefore, the available statistics give no indication of what, if any, effects of living in a single-parent home has on academic achievement and whether these students' achievement differs from that of comparable students in two-parent homes.

single-salary schedule A salary scale based solely on training and years of experience,

eliminating merit, area of teaching, student ages and hazards or job difficulties as considerations. Thus, an elementary school teacher, a middle school art teacher and a high school chemistry teacher would all receive the same salaries under a school district's single-salary schedule if, for example, they each had a B.A. and one year of teaching experience. Conceived in 1920 to mitigate discrimination on the basis of gender and between elementary and secondary school teachers, the single-salary schedule is calculated graphically by listing years of experience along the vertical axis and teacher-training level (B.A., M.A., M.A. plus 30 credits, doctorate, etc.) along the horizontal. The cell where each teacher's training and experience levels intersect automatically determines his or her salary for the year. The calculation has been modified somewhat since the early 1980s, to account for added extracurricular counseling or administrative duties.

single-sex education The purposeful segregation of students by gender in separate classrooms or in separate schools. Standard in almost all 19th-century colleges and many secondary schools and primary schools, single-sex education all but disappeared from American education in the 1960s and 1970s—largely because of civil rights laws banning gender discrimination and because of the financial advantages of COEDUCATION. Until well into the 19th century, however, the common wisdom was to educate boys and girls separately, although "common schools" usually educated five-, six- and seven-year-old boys and girls together for economic reasons. Aside from fears that children might engage in premature sexual behavior, schools segregated older children by gender because their courses of study differed so dramatically, with males studying arts and sciences, mechanics (engineering) and the professions and females studying the "domestic" and "ornamental" arts in preparation for

lives as wives, mothers and homemakers. As males and females began studying a common core curriculum, however, and as sexual mores changed, single-sex education disappeared. Fewer than 40 women's colleges remain in the United States—down from 228 in 1980—and only nine have enrollments that are 100% women. The rest are coeducational in the legal sense, but their student bodies consist predominantly of women, while male enrollments range from 0.2% of the student body to 23.5%. Only five all-male colleges remain.

The number of single-sex elementary and secondary schools has also declined dramatically. By 2000, there were only about 140 girls' day schools in the United States, compared

with more than 200 a decade earlier, and fewer than 120 boys' day schools, compared with about 150 in 1990. The number of boys' boarding schools remained stable at just over 70 during that period, but the number of girls' boarding schools fell from more than 50 to about 40. Many of the remaining single-sex schools were operated by either the Roman Catholic Church or Roman Catholic organizations, which have been slow to succumb to the coeducation movement.

Ironically, just as the women's equality movement had succeeded in all but nailing shut the coffin of single-sex education, a new array of studies emerged to show that coeducation was actually failing to promote equality of



Perceived inequalities in coeducation have spurred renewed interest in single-sex education. Shown here is the Emma Willard School in Troy, New York, the first women's academy in the United States. (Emma Willard School)

the sexes. Conducted by researchers at (all-women) Wellesley College, George Washington University and the American Association of University Women, which had led the struggle for gender equality in schools, the studies found that coeducation actually perpetuated gender stereotyping, with boys called on two to 12 times more than girls in coed classrooms, encouraged to take risks and treated as future leaders. Teachers in coed classrooms treated girls as followers, according to the studies, and discouraged them from academic risk-taking in advanced fields such as mathematics and science. Even more damaging, the studies found that girls started coed high schools with higher scores on standardized tests but finished with lower scores.

Meanwhile, all-women's colleges, with a mere 4.5% of all female college graduates in the United States, were producing one-third of all women board members of Fortune 500 companies and one-half the women in Congress. Graduates of five all-women's colleges—Barnard, Bryn Mawr, Mount Holyoke, Smith and Wellesley—accounted for 43% of the math doctorates and 50% of the engineering doctorates earned by American women. Such graduates were also three times more likely than women at coeducational colleges to earn bachelor's degrees in economics and one and a half times as likely to major in science and mathematics. Proponents of single-sex education say that all-girl schools and women's colleges provide role models, a supportive environment and an opportunity to exercise leadership that all but the most talented would be denied in coeducational environments. In contrast, the most important public events at coeducational schools are often men's athletic contests.

Although studies of single-sex education for girls and women far outnumbered those for boys and men, advocacy of single-sex education for males is also increasing. Proponents contend that boys in coeducational situations

are less likely to take risks in areas such as singing, dance, drama, design, the fine arts and creative writing, which they view as somewhat less than masculine. Moreover, there is a growing perception that coeducational classes provide distracting social and sexual pressures for both boys and girls in all classroom situations.

By the late 1990s, the accumulated evidence of diminished academic performance of both boys and girls in coeducational settings sparked an effort in a number of public schools to create single-sex classes—and another study by the American Association of University Women of such classes in New York, Virginia, Maine, New Hampshire, Illinois and California. (California, by then, actually subsidized school districts that created all-boys and all-girls academies with grants of \$500,000 each.) The AAUW study, however, found no differences in academic performance from that of boys and girls in coeducational classes. Although girls found themselves more comfortable in single-sex classes and emerged with better attitudes toward traditionally male subject areas, they did not emerge with measurably better skills or academic proficiency.

(See also GENDER DISCRIMINATION; WOMEN'S EDUCATION.)

Sipuel v. Board of Regents of the University of Oklahoma A 1948 U.S. Supreme Court ruling that the state must provide opportunities for legal education for blacks and must do so for one race as soon as for the other. The decision forced the state to choose between providing law faculties and building law schools at black universities or opening the law schools at all-white public universities to black students. *Sipuel*, however, had an importance that would reach beyond the realm of law school education: It proved to be one of a succession of five cases, from 1938 to 1954, that the National Association for the Advancement of Colored People would bring to the

Supreme Court in a long-range effort to end racial segregation in American education. That effort culminated in 1954, with the successful prosecution of *BROWN V. BOARD EDUCATION OF TOPEKA*, in which the Court did indeed declare racial segregation in public schools unconstitutional.

Sizer, Theodore S. (1932–) American educator, educational reformer, author and developer of the modern concepts of active learning and PORTFOLIO assessment of student academic achievement. Educated at Yale University, Sizer served as headmaster of the prestigious Phillips Academy, Andover, Massachusetts, then as dean of the School of Education at Harvard University and then as professor of education at Brown University.

At Brown, he established one of the three major, educational reform movements of the late 20th century: the COALITION OF ESSENTIAL SCHOOLS, a group of several hundred public high schools where he introduced the concept of active learning. Based in part on the teaching methods of Socrates and in part on those of American educator/philosopher JOHN DEWEY, active learning calls on teachers to act as “coaches,” with students learning from classroom and field experiences and engaging in exchanges of ideas with their teachers. Active learning contrasts with the traditional approach to education based on the theory that a child’s mind was a “clean slate”—a tabula rasa. “If you assume the mind is an empty slate rather than a muscle to be exercised, then you [the teacher] imprint on the kid’s mind,” Sizer explained. “The notion of schooling as drill comes out of that assumption.” Lecture and memorization were effective, he said, until the 1960s, “the first decade when every adolescent was in school. In the ‘good old days’ people talk about, you didn’t have the so-called ‘at-risk’ students in school. As soon as you get kids in school who don’t really want to be

there, their boredom and rejection of routine is more obvious, and it forces people to think differently.”

Dewey, Sizer points out, proved that children learn from experience, that they are attracted to objects and activities that interest them and learn from direct engagement with those objects and activities. The participation of teacher/coaches should serve to expand learning from such engagements and stimulate additional learning. While Dewey changed elementary education, his ideas had less far-reaching effects on secondary education. Sizer refined Dewey’s ideas and applied them to secondary education, where the tabula rasa system of instruction still prevailed, with students listening to and taking notes from teacher lectures, in an atmosphere of what Sizer called “sustained boredom.”

“Not only does the notion of the empty slate not square with current research,” Sizer pointed out, “it does not square with common sense. A modern example is how we learn to use a computer. You don’t just look at the instruction book, memorize it and then turn on the machine. You learn in a series of back-and-forths, where something you need to do compels you to find out how to do it. Yet what we do in [high] school—figuratively speaking—is, say, ‘First read the manual front to back, and then apply it.’”

Sizer launched his Coalition of Essential Schools in 1984, also introducing the concept of portfolio assessment “in which a kid’s work is collected, and wise people, call them ‘educational auditors’ can look at these files and make a judgment of the kid’s work over time.” A participant in the landmark *Paideia Proposal*, with Mortimer J. Adler and other major American educators and educational reformers, Sizer’s major works have included *Secondary Schools at the Turn of Century* (1964) and the seminal *Horace’s Compromise: The Dilemma of the American High School* (1984).

skewed distribution An asymmetrical distribution of scores, with more scores at the negative or positive ends of the scale than in the middle. In a **NORMAL DISTRIBUTION CURVE**, or "bell curve," the majority of scores should fall in the middle, with the median, mode and mean coinciding at the central point. In the classroom, a negatively skewed distribution of scores would indicate that an examination or assignment was too difficult for the students relative to their knowledge and preparation; a positively skewed distribution would indicate that the test material was too easy.

skill development The acquisition of productive uses for a child's perceptual, motor and intellectual functions. Skill development varies from age to age, with children normally acquiring the basic elements of perceptual and motor skills between the ages of two and three and thinking skills between three and four, with **PLAY** being the principle vehicle for skill acquisition. Even in preschool and the early elementary grades, play—or academically oriented variations thereof—remains the primary vehicle for skill development, by maintaining peak student interest. Where interest in a school activity flags, skill development in that area invariably languishes. Basic skill development is usually complete by the end of the elementary years.

Skinner, Burrhus F. (1904–1990) American behavioral psychologist, educator and inventor of the first teaching machine and of **PROGRAMMED INSTRUCTION**. Born in Pennsylvania and educated at Harvard University, Skinner joined the Harvard faculty in 1948, at which time he began applying his theories of behavioral psychology to formal education. He developed the teaching machine, which used programmed instruction to speed and ensure total comprehension in the academic learning process. Now a standard element of all com-

puter-operated learning systems, programmed instruction presented the student with a series of separate, sequentially ordered and incrementally different and more difficult bits of information. Each increment was so small, however, that even a student of minimal intelligence could easily progress. The student had to absorb and understand each bit of information before the machine would proceed to the next bit of information. With the presentation of each bit, the machine would also force the student to review and demonstrate knowledge of all accumulated data bits.

Before inventing the teaching machine for humans, Skinner had invented the Skinner Box, which used reward and punishment to teach a wide variety of animals (including rats, dogs and monkeys) a surprisingly broad range of unusual behavior. Skinner taught pigeons to play pingpong—and to keep guided missiles on target. (The latter was part of a U.S. government research project during World War II.) Before returning to Harvard, Skinner had taught at the Universities of Minnesota and Indiana. A philosopher as well as a psychologist, Skinner believed that psychology and programmed learning could be used to develop a system of behavioral and social engineering. Aside from technical works for academic audiences, he was the author of the widely read *Walden Two* (1948), the tale of a utopian society whose members are products of behavioral engineering that has programmed them to make individual freedom subservient to the common good. A second, similar work, *Beyond Freedom and Dignity* (1971), expanded on the theme, insisting that traditional concepts of individual liberty were obsolete and that societal crises could end only by programming individuals to serve the interests of the group.

slavery A social institution with one class of human being the irrevocable property of another class and entirely subject to its will.

The owners can use their slaves for whatever purpose—as laborers, servants or sexual objects. Generally, owners may buy, sell, give or pledge their slaves for debt; they may enchain, brand or disfigure their slaves, or do anything they wish—just as they might with livestock. Slavery was an integral part of American life during the colonial era and for the first 75 years after independence. Its effects continue to influence social life and education in the United States to this day.

The practice of slavery dates back to prehistoric times and was normal almost everywhere in the world until the fifth century, when various western European rulers introduced serfdom as a somewhat more humane and less binding form of involuntary servitude. In the seventh century, however, the explosively growing religion of Islam incorporated slavery as a legitimate institution, and the practice once again became universal in all but the relatively small, Christianized areas of western Europe.

In North America, the first slaves—all blacks from Africa—arrived in Jamestown in 1619, and statutory recognition of slavery began in Massachusetts in 1641, in Connecticut in 1661 and in Virginia in 1661. By the time of independence, slavery was the law of the land. Although Britain abolished the slave trade in 1807 and the United States followed suit in 1808, the American Constitution had left the issue of slave traffic and ownership within national boundaries to the individual states. In 1800, there were nearly 900,000 slaves, of whom about 36,500 were in the northern states—used largely as domestic servants. By 1804, however, Vermont, Pennsylvania, Massachusetts, Rhode Island, Connecticut, New York and New Jersey had passed legislation that abolished slavery within their borders. The nearly 4 million slaves of the 1860 census were almost all in the southern states, which depended on them for cheap labor and refused to abolish slavery until forced to do so by the Civil War.

Fearing that education would stir a rebellion, southern states had made it a crime, punishable by fine and imprisonment, to teach African Americans to read or write. As a result, at the end of the Civil War 4 million African Americans were not only illiterate and innumerate but also incapable of earning an independent living. Northern white missionaries helped build and staff dozens of vocational and academic schools and colleges for blacks in the South, but, from the end of Reconstruction in the 1870s, southern state governments refused to fund them. When federal courts ordered southern states to provide blacks with public education equal to, albeit separate from, whites, the states reduced funding to all public education to a minimum. The result was a public school system that left southern whites appallingly undereducated well into the 1950s.

The economic effects of poor education were equally disastrous, with industry refusing to build new plants in areas where it could not find a skilled, literate work force. Although major southern cities began a vast and thoroughly successful educational and economic reconstruction movement in the last half of the 20th century, rural areas of the south continue to be among the nation's most backward—educationally, culturally and economically—and their condition is directly traceable to the institution of slavery and the racial divisions that persist to this day.

(For a more complete discussion of the effects of slavery and education, see *AFRICAN AMERICANS*; *CIVIL RIGHTS ACT OF 1964*; *DESEGREGATION*.)

Smith, Adam (1723–1790) Scottish economist who developed the science of political economy and in so doing prescribed a system of universal public education that his disciples would introduce in the United States. A professor of theology, ethics, jurisprudence and political institutions at Glasgow University, he

resigned in 1764 to travel throughout Europe and meet with leading philosophers and economists. Returning to Scotland in 1767, he spent the next decade working out a theory of the division of labor, money, prices, wages and distribution. The result was his monumental *Inquiry into the Nature and Causes of the Wealth of Nations* (1776), which laid the foundations for the modern science of political economy.

Divided into five parts, the book deals with education in a final section on public institutions and works, including schools. Although he preferred private education, Smith insisted that the state had a responsibility to educate the common people at public expense, to prevent them from slipping into the torpor and stupidity that is symptomatic of those engaged in routine labor. He called an instructed and intelligent people more decent and orderly than an ignorant and stupid people, thus making the state's responsibility to educate the common people even greater in a free society. Smith's books slowly made their way to the United States, where they deeply influenced Franklin, Jefferson, Hamilton, Adams, Madison and others who called for universal primary education to be included in the Constitution as a basic right of all Americans. Southern slave states and northern cotton mill owners who depended on cheap child labor rebuffed them.

Smith, William B. (1727–1803) Scottish-born colonial educator whose visionary curricular plan provided the basis for college studies in colonial America and the United States for more than a century. Educated and ordained at the University of Aberdeen, he immigrated to New York in 1751, where he served as a private tutor for two years and prepared a pamphlet, *A General Idea of the College of Mirania*, which received wide circulation among the nation's most prominent citizens, including BENJAMIN FRANKLIN. The pamphlet provided a vision of

the fictional utopian province of Mirania, settled in the New World by the English in the early 17th century. By the 1740s, the inhabitants had become "a mighty and flourishing people"—due in part, at least, to their educational system. Designed to meet practical needs rather than as a conduit to the ministry (like the real colleges of the day), Mirania's educational system was divided into two parts, one for young men destined for public service, the "learned professions" (divinity, law and medicine) and agriculture, and the other for students destined for the mechanical professions, skilled trades and all other occupations.

All were educated in common during their first three years of schooling, to prevent development of class prejudices and to establish "indissoluble connections and friendships." Those destined for the trades then enrolled in a six-year mechanics' program, while those bound for the professions enrolled in a five-year Latin school before entering a four-year college. The first-year college curriculum consisted of algebra, geometry, astronomy, chronology, navigation, logic, metaphysics and practical surveying. The second-year curriculum consisted of ethics, physics, natural history and mechanical and experimental philosophy. In the third year, students learned rhetoric, poetry, the precepts of oratory and the canons of taste and criticism as conceived by Cicero, Quintilian, Demosthenes and Aristotle. In the fourth year, the principal taught Miranian college students agriculture, hygiene, chemistry, anatomy, history, ethics and politics.

In 1754, Franklin invited Smith to teach at his academy, which, with FRANCIS ALISON, he helped convert into the COLLEGE OF PHILADELPHIA (now the University of Pennsylvania). He became the college's first provost (1755–79) and transposed the Miranian curriculum into a three-year bachelor-of-arts program that was by far the broadest, most varied course of study at any college in America. It

served as a model for all American colleges for the next century.

Smith College The largest private college for women in the United States, with more than 3,100 students in its four-year undergraduate program. Founded in Northampton, Massachusetts, in 1871 with an endowment from the American philanthropist Sophia Smith (1796–1870), the college is one of about 60 surviving women’s or primarily women’s colleges—from a group that had numbered more than 225 several decades earlier. Opened at a time when few women were permitted access to higher education, Smith now has 55 male undergraduates and a coeducational graduate school and is a member of a five-college consortium that permits men and women to attend classes and obtain full credit for courses at Smith, Mount Holyoke, Amherst and Hampshire Colleges and at the University of Massachusetts at Amherst.

Smith-Hughes Act A 1917 federal law that provided federal government matching grants for the establishment of vocational education programs in American high schools. The result of intensive lobbying by the National Society for the Promotion of Industrial Education, the act created a federal board of education charged with expanding high school instruction of agriculture, home economics and industrial trades by training more teachers in these fields and subsidizing their salaries. The act was the first incursion into public secondary education by the U.S. government and the first federal involvement in public education since passage of the two Morrill Acts that created LAND-GRANT COLLEGES during the late 19th century.

Pressure had been building for several decades for the federal government to intervene in what was seen as a deteriorating and irrelevant public school system in the United States. As late as 1910, only about 10% of American children graduated from high school,

and adolescents—many of them children of immigrants—were ill-prepared to function in what had become a highly sophisticated agricultural and industrial society. Indeed, hundreds of thousands of semiliterate, unskilled and unemployed adolescents roamed city streets and country roads with no means of sustenance other than begging, stealing or prostitution. The Smith-Hughes Act was designed to broaden and restructure American public schools and to prepare the next generation of American children for useful work.

(See also GEORGE ACTS.)

Smith-Lever Act A 1914 federal law that provided subsidies to land-grant colleges to establish the first cooperative extension programs. The programs were designed to provide “useful and practical information relating to agriculture and home economics” and thus revive the declining American agricultural economy. From their beginnings, extension programs were a cooperative venture between the LAND-GRANT (state) COLLEGES and the U.S. Department of Agriculture, which provided agents at each college to set up demonstration programs. The programs covered the gamut of agricultural education: They provided elementary agricultural training for boys in “corn clubs” and for girls in “tomato clubs”; demonstrations in sewing, canning and home gardening for farm women; and demonstration farms to teach farmers techniques of planting, cultivating, fertilization and crop rotation.

At the time, crop yields had dropped disastrously in the wake of several decades of intermittent droughts, dust storms, pest infestations, incessant overplanting and farmer ignorance about modern agricultural methods. The demonstration-farm technique had been used effectively in Texas in 1903, under the leadership of SEAMAN A. KNAPP, a scientifically trained farmer who had been a professor of agriculture and then the president of Iowa Agricultural Col-

lege. He had developed the demonstration-farm technique as a way of teaching modern agricultural methods to local farmers who might have resented formal instruction from college professors but were quick to imitate the evidently successful methods of a farmer-neighbor (who happened to be a professor). Knapp took his demonstration-farm "teaching" technique to ravaged areas of the South, where he received annual grants from the GENERAL EDUCATION BOARD from 1906 until 1914, when the Smith-Lever Act was passed and subsidized his approach on a national basis.

Smithsonian Institution The world's largest museum complex and a center for scholarly research on a wide range of topics in the sciences and humanities. An agency of the U.S. government, the institution was founded in 1846 by an act of Congress, under the terms of a £100,000 bequest by English scientist James Smithson. The bequest had called for the "founding at Washington, under the name of the Smithsonian Institution, an establishment for the increase and diffusion of knowledge among men." Although Congress received and accepted the legacy in 1836, it took the government a decade to resolve the heated debate between politicians, scholars and ordinary citizens over the exact shape of the institution-to-be. Some called for the establishment of a national university; others suggested a postgraduate educational institution in the arts and sciences, for students who had graduated from college but not yet enrolled in professional schools. There were various calls for the construction of a national astronomical observatory, for a national agricultural school, for a national library, for a publications center to publish and disseminate all the works of American researchers, and for a center for scientific research and inquiry. Still others envisioned a center combining almost all these elements, while a few xenophobes insisted that the funds be returned to England as an

insult to the new American nation, which, they insisted, was quite capable of building its own cultural institutions.

In the end, Congress created what is essentially a composite institution that maintains scientific and artistic collections, sponsors scientific research and exploration, publishes books and periodicals, provides broad educational opportunities for the American public and maintains a library of about 1 million volumes dealing with science, natural history and the humanities. The institution is governed by a board of regents, whose members are the vice president of the United States, the chief justice, three members of the Senate, three members of the House of Representatives and nine "illustrious" citizens appointed by Congress. Although based in Washington, D.C., the Smithsonian Institution is actually a complex (indeed, the world's largest) of 14 institutions (and a zoo) scattered across the Americas, among them: the Cooper-Hewitt Museum, which is the Smithsonian Institution's National Museum of Design, in New York City; the Smithsonian Astrophysical Observatory, in Cambridge, Massachusetts; Smithsonian Environmental Research Center, in Edgewater, Maryland, and Smithsonian Tropical Research Institute, on Barro Colorado Island, Gatun Lake, Panama.

The vast majority of the Smithsonian Institution's many units, however, are in Washington, D.C. They include the Arthur M. Sackler Gallery of Asian and Near Eastern Art; the Freer Gallery of Art (Oriental art, plus a collection of works—including the "Peacock Room"—by the 19th-century American artist James Whistler); the Hirshhorn Museum and Sculpture Garden (19th- and 20th-century European and American art); the John F. Kennedy Center for the Performing Arts; the National Air and Space Museum, with a comprehensive survey of the development of aviation and astronautics; the National Gallery of Art, one of the world's greatest collections of paintings, spanning many

centuries, and including works by Old Masters as well as 19th- and 20th-century artists and sculptors; the National Museum of African Art; the National Museum of American Art, with 25,000 works from the 18th century to the present; the National Museum of Natural History; the National Portrait Gallery, with portraits of great Americans, and the National Zoological Park, with nearly 500 species of animals.

social promotion A term from the 1930s and 1940s referring to the advancement of students to the next higher grade in public elementary and secondary schools on the basis of age rather than academic achievement. Designed to mitigate public humiliation because of academic failure, social promotion was largely eliminated by the introduction of ability grouping and tracking. In both cases, students remained in the appropriate grade with their age mates. Thus, elementary school students would remain with their age mates but be taught in slower or faster sections, according to their academic abilities. At the high school level, tracking systems placed students in one of three broad curricular “tracks,” or programs: an academic track for the college-bound, a general track for slower students unlikely to attend college after graduation and a vocational track for students interested in learning skilled trades. Within the academic track, ability grouping saw slower students in “regular” sections of each course, with the more gifted students placed in “honors” classes.

Enactment of federal GOALS 2000 legislation and the SCHOOL-TO-WORK OPPORTUNITIES ACT OF 1994 forced many schools to abandon GENERAL EDUCATION in favor of academic and vocational education programs. Most states adopted education reform legislation that required competency testing for promotion to the following grade and for high school graduation. Although such reforms have not eliminated social promotion, the practice has

declined substantially in most American public schools in favor of extra tutoring, summer school and special education to assure adequate academic progress for slower students. In 2001, the percent of public school teachers reporting that their schools practiced social promotion had dropped to only 31%, from 41% in 1998.

social service movement A nationwide thrust to deliver a variety of social, psychological and health services to socioeconomically deprived children in inner-city schools across the United States. Not formally organized as a national program, the movement is actually made up of a variety of independent efforts, with some data-based technical coordination provided by the United States Department of Education.

In 1992, Kentucky mandated establishment of social service centers in every school (a total of more than 300) with more than 20% of its students from families living below the poverty level. New Jersey started a program in 1987, mandating social service centers in at least one school in every county. Iowa did the same two years later.

Some cities, such as Denver, St. Louis, Chicago and Miami Beach, have acted independently of the state and established social service centers in their inner-city schools. In California, several foundations set up a partnership with the state to establish school social service centers. New York, borrowing on the California model, established the largest citywide, in-school social service program, in partnership with the CHILDREN’S AID SOCIETY and a number of private foundations and corporations. Called the Beacon Program, it comprises social service centers, each operated by the Children’s Aid Society and funded almost entirely with grants from foundations and businesses, in more than three dozen schools. The programs operate before, during and after school and, in many

cases, on weekends, offering comprehensive dental and health care and social and psychological services for abused, neglected, violent, addicted or otherwise needy children. Beacon schools also operate before-and-after-school classes and recreation programs. Offering "everything you need outside your house," Beacon schools social service programs are far less costly than conventional social service programs available from hospitals and government social welfare agencies. Indeed, costs per child average only \$950 a year, with delivery of services absorbing 90 cents of every dollar, compared to only 65 cents for conventional out-of-school social services. The savings accrue largely from the rent-free basis of Children's Aid Society facilities. Utilizing otherwise idle school space, they pay no rent, utilities, insurance or maintenance, which are all part of the normal costs of operating each school.

In-school social service dates back to the 1890s, when the journalist Jacob Riis (1849–1914) published photographs of the intolerable conditions in New York City's slum schools. In the 1920s and during the Great Depression of the 1930s, many doctors, dentists and social workers set up offices in schools across the nation to treat economically deprived children. Extended, widespread prosperity saw the social service movement all but disappear after World War II. It did not stage a revival until the mid-1980s, when a variety of government studies indicated social and medical neglect as a primary cause of low academic achievement and high dropout rates among inner-city school children.

The social service movement has not been free of controversy. In late 1994, the Committee for Economic Development, an organization of executives at some 25 major American corporations, called for an end to social services in public schools. It urged abandonment of efforts to incorporate mentally and physically handicapped children in regular class-

rooms and called for an end to social services such as pregnancy counseling, AIDS information and even driver education classes. "America's public schools are being spread too thin," agreed Richard W. Riley, SECRETARY OF EDUCATION at the time. Presenting a report titled "Putting Learning First," Riley contended that schools were failing the business sector. Employers "feel that a large majority of their new hires lack adequate writing and problem solving skills." Even Albert Shanker, then president of the American Federation of Teachers, agreed that "you should not get into college just because you're breathing and you're 18."

The report charged that "communities, states and the national government are asking those who manage our classrooms to be parent, social worker, doctor, psychologist, police officer and, perhaps, if there is time, teacher. It seems that whenever a social crisis, such as AIDS, child abuse or drunk driving is perceived, the government looks to the schools to solve it." The report urged schools to limit their services to education and force government to shift social services to better equipped agencies. The report had no effect.

social settlements A group of private, non-profit organizations that sought to change the plight of the poor at the turn of the 20th century and grew into one of the most influential social, political and educative forces in American history. They emerged during the 1880s and 1890s, at a time when major American cities were overflowing with millions of illiterate and semiliterate immigrants, some skilled, some not. Those who found work were usually packed into factories, mills, mines and sweat shops, 12 hours a day, seven days a week, earning \$3 to \$10 a week. To keep labor costs down, farms, mines and factories depended heavily on child labor, with children seven to 14 years of age shipped like cattle from state to state to work in tobacco fields, canneries, mines, meatpacking plants and

textile mills. By 1900, more than 1.7 million children were engaged in such labor.

By the late 1890s, several years of drought and dust storms had ravaged the American agricultural economy, while a panic in 1893 had devastated the rest of the economy, closing banks, factories and businesses across the nation. The result was social chaos, with millions of unemployed and homeless—and unattended children—roaming the streets and country roads by the hundreds of thousands. The government was helpless—indeed, it was bankrupt—and so short of cash that it had to borrow funds from private banks to pay its own employees.

Two new institutions evolved out of the social chaos: One was the institutional CHURCH and the other was the settlement house. Both were built on similar socio-theological foundations, with the former fearing the death of Christianity if the church did not share its wealth with the destitute and the latter fearing the end of democracy and civilization if the wealthy, educated classes did not share their wealth with the poor and ignorant. Although there were subtle differences in their motives, their goals were the same, but in the end the very secular nature of the settlement house movement drew far more supporters than the institutional church and made it far more powerful and effective.

The social settlement house movement actually began in London in the 1870s, when a group of social reformers that included the elder Arnold Toynbee, among others, determined that the industrial revolution had set in motion a class conflict that was tearing the social fabric of their nation asunder. They appealed especially to young intellectuals at Cambridge and Oxford Universities to settle among the poor and bridge the gap that the industrial revolution had created between the urban poor and the larger society. In 1883, clergyman Samuel A. Barnett read two papers

to Oxford and Cambridge students. One was "Settlements of University Men in Great Towns," which coined the term "settlement." He urged his student listeners to bring culture and education to working people and, in turn, to learn the horrors of the industrial worker's plight and to bring about social reform. A group of students heeded Barnett's call and on Christmas Eve, 1884, founded Toynbee Hall as the first permanent social settlement and the "spiritual mother house" of the social settlement movement.

In 1886, Stanton Coit, an Amherst College graduate who had spent a few months at Toynbee House, returned home to found a similar settlement in New York City's teeming Lower East Side slums. Known first as the Neighborhood Guild and later as the University Settlement, it was the first settlement in the United States. A year later, a group of Smith College alumnae founded the College Settlements Association, and in 1889 JANE ADDAMS and ELLEN GATES STARR founded Chicago's HULL-HOUSE, the quintessential American settlement house that became the model for the hundreds that followed. By 1891, there were six settlements in the United States. Their number grew to more than 100 by 1900 and more than 400 by 1910, and their leaders and disciples would influence social legislation and education for much of the 20th century. Settlement houses at the turn of the century were the seedbeds for women's suffrage, child labor legislation, progressive labor legislation and social security.

About 60% of all settlement house worker-residents were women and almost 90% were college-educated. Most were committed enough to social service to forgo marriage in favor of a life of educating the poor and the working classes of American slums. Often born of wealth, they relied on family and social ties for funds, acquiring buildings where they brought the advantages of their education and a host of desperately needed social services to working

people who lived in the surrounding neighborhoods. Emulating and building on the example of Toynbee Hall, they brought art exhibits, evening and Sunday concerts, university extension classes, lectures, cooking and sewing classes, adult education and books to the slums; they taught the poor and working classes their political rights and rallied them to support such political causes as library, park, playground and school construction. They provided temporary housing and food for the destitute, reading rooms, recreation facilities, free day nurseries and kindergartens, health clinics, summer camps and, above all, caring institutions for young and old, no matter how desperate.

As the public itself learned the essentiality of the settlement house movement and increased its support, the public sector began absorbing many of the functions of the movement. Public schools gradually absorbed many settlement house children's programs, while public welfare authorities took over such functions as health care, emergency housing and feeding and relief programs. In effect, the settlement house movement taught the monied public its obligation to care for the destitute, and the public sector gradually took over those functions. Settlement houses did not, however, disappear. Always in the forefront of public welfare, they were first to establish programs for troubled youth in the 1960s, for inadequately cared-for senior citizens in the 1970s and for the homeless in the 1980s.

social studies An amorphous, interdisciplinary course of studies that includes history, geography, political science, civics, economics, culture and sociology. Unique to the American public school system, social studies is, to one degree or another, an integral part of the public elementary and middle school curriculum. Two years of high school social studies are required for graduation in almost every state.

Often called "social slush," social studies has been under attack by educators since it was first introduced into the public school curriculum in 1905. At the time, fewer than 10% of American youth ever finished high school. Most children attended school during the early elementary grades, barely learning to read, write and calculate before joining the work force. Because of the explosive growth in the number of immigrant children during the last decades of the 19th century, educators feared that children would not learn enough American history, geography and culture during their brief sojourn in school to assimilate into American society. The social studies curriculum was an effort to cram into a single course enough basics of the American past and its then-current customs to Americanize immigrant children and help them function effectively in American society.

As public schooling expanded and compulsory education and child labor laws forced most children to continue their education beyond elementary school, the social studies curriculum expanded accordingly. Its content varies so widely from school to school and state to state, however, that there is little uniformity in what American youngsters learn. Until the mid-1990s, most elementary schools still relied on a model developed in the 1930s called "Expanding Horizons," in which pupils studied concepts of the individual and the family in kindergarten, then studied, in successive grades, the community, the state, the nation and the world. United States and world history, however, were condensed into inconsequentially minute overviews for fourth, fifth and sixth graders, with the result that students had little knowledge of history—or any of the other academic areas social studies supposedly covers—as they entered middle school and high school.

In a single year of elementary school, for example, a social studies course might deal with

colonial life in New England, life along the Congo River in Africa and Jackie Robinson's successful penetration of organized baseball's racial barriers in the United States in the late 1940s. The pejorative term "social slush" resulted and, as critics are quick to point out, along with it the abysmally low scores of American students of all ages in standardized history and geography tests. On a scale of 0 to 500, American twelfth graders averaged only 285 on geography and 287 on history proficiency tests. Only 1% of twelfth graders and 4% of eighth graders showed advanced proficiency in geography, while 25% of twelfth graders and 30% of eighth graders were deemed "proficient." Some 29% of twelfth graders and 26% of eighth graders showed less than basic knowledge of geography and, in effect, failed. They did somewhat worse in history, where only 1% of twelfth graders and 2% of eighth graders demonstrated advanced proficiency with "detailed understanding of historical vocabulary, facts, regions and ideas." About 25% of twelfth graders and 21% of eighth graders were deemed "proficient," demonstrating "knowledge of basic historical terms, facts, regions and ideas" and "some knowledge of primary texts (the Constitution, Gettysburg Address, etc.) in U.S. political history." But 26% of both groups failed the test by scoring "below basic" levels of proficiency.

Critics insist that social studies be replaced with the type of focused courses taught in academically demanding American private schools (and public schools in Europe and Japan)—i. e., history (ancient, medieval, modern Europe, American, etc.), geography and political science. In the mid-1990s, a handful of publishers were beginning to issue a more focused series of texts in response to low student achievement levels in history, geography and other elements of social studies.

social utility theory An approach to curricular development designed to make almost

all studies provide students with knowledge and skills that will help them function successfully in society. The theory resulted from a series of four reports beginning in 1911, by the National Education Association's Committee on the Economy of Time. NEA was responding to growing demands for educational reform by critics who charged that public schools were ineffective in preparing children for real life.

Society for Propagation of the Gospel in New England A charitable organization created by the English Parliament in 1649, to convert American Indians in the Massachusetts Bay Colony to Christianity. A privately run organization, it was financed largely by Puritan merchants and other men of import, including Oliver Cromwell. The society supported the work of such missionaries as the Rev. JOHN ELIOT, of Roxbury, Massachusetts, who produced an "Indian Library" consisting of Algonquian translations he made of the Bible, Psalter, a grammar, a primer, a catechism and several other books on piety and religious practices. After the Restoration, the society was reincorporated by a new Parliament as the Company for Propagation of the Gospel in New England, and the Parts Adjacent in America, but continued its earlier work, buying clothing, building materials and tools for Indians, paying the salaries of ministers and schoolmasters to work among the Indians, and, in 1653, financing construction of the Indian College at Harvard. The latter proved a failure after it was unable to recruit an adequate number of qualified Indian students. By 1675, the society's efforts had nevertheless resulted in the conversion of about 2,500 Indians, or about 20% of the 12,500 Indians in New England.

Society for the Promotion of Agriculture, Commerce, and Art A mutual-education organization founded in 1781 in New Jersey to

help farmers and merchants achieve success in their enterprises. The society served as a model for similar mutual-education groups in Philadelphia, South Carolina and elsewhere. With few schools yet constructed, early American colonials were forced to educate each other in taverns, inns, Masonic lodges and through a handful of organizations such as BENJAMIN FRANKLIN'S AMERICAN PHILOSOPHICAL SOCIETY. In 1748, the SOCIETY FOR THE PROMOTION OF USEFUL KNOWLEDGE was formed to improve culture in New York City, and a similar group, the Virginia Society for the Promotion of Useful Knowledge, emerged in Williamsburg in 1773. In 1780, a group of Bostonians established the American Academy of Arts and Sciences, with John Adams and John Hancock among the founding members. The Society for the Promotion of Agriculture, Commerce, and Art differed from these earlier mutual education groups in that its thrust was far more practical, and its appeal was directed to farmers and merchants who were less interested in culture than they were in entrepreneurial success. In effect, the society was the forerunner of the thousands of trade associations and societies that continue to serve as important educative institutions for Americans in business, industry and scientific research.

Society for the Promotion of Useful Knowledge Originally a literary club, founded in New York City in 1748. Later, it became a major force in blocking the establishment of the Church of England as the official religion of the American colonies. The club was formed by three scions of prominent New York families of the day: William Livingston, William Smith, Jr., and John Morin Scott. All were Presbyterians; all were educated at Yale; all attended law school and all served part of their legal apprenticeships in the law office of Smith's father, where they became close friends. They discovered a common disdain for the drudgery of day-to-day legal practice

and an equally common love of literature, art, music and other amusements. Deciding to devote their efforts to the cultural expansion of what they considered a culturally barren city, they organized the Society for the Promotion of Useful Knowledge.

A year later they announced plans to publish *The Independent Reflector*, a weekly that was to have been modeled after *The Spectator* in England, with essays for "correcting the taste and improving the minds of our fellow citizens." By the time the first issue went to press in 1752, however, their focus—like that of the entire city—had shifted from the city's cultural development to interdenominational religious bitterness and the question of the city's religious future. At the time, the legislature was just founding the state's first college and, despite a wave of anticlericalism, had appointed trustees who were almost all members of the Church of England.

When Trinity Church proposed deeding some of its lands to the new college, Livingston, Smith, Scott and their society led a massive protest by Presbyterians and other dissenting sects. They warned that the Church of England was planning a "monster tyranny" that would place all the colonies under its control. The first issue of the *Reflector*, now modeled after *The Independent Whig* and *Cato's Letters*, called for a crusade for liberty and reform of "the abuses of my country." Subsequent issues demanded an end to excise taxes and to unrestricted immigration to the colonies—especially for felons. *The Independent Reflector* continued, however, to focus on education and the religious furor surrounding the founding of New York's new college. The *Reflector* urged that admission of students to the new college be based on parity of all Protestant denominations. It called for the founding of the college by the colonial assembly rather than by a charter from the Crown and for placement of its supervision under civil rather than

church authorities. It urged that divinity be eliminated from the curriculum, and it called for establishing county grammar schools to feed students into the new college.

In the end King's College was founded by charter of King George II. Although its first president, Samuel Johnson, was an Anglican clergyman, he was a convert from Congregationalism and apparently sensed the danger that sectarianism presented to the future of the institution. While King's College (later, Columbia) remained officially Anglican until it was closed by the Revolutionary War, religion played a relatively minor role in day-to-day academics. Through the *Reflector*, however, the Society for the Promotion of Useful Knowledge continued to call for secularization of higher education, and it laid the political and philosophical groundwork for the establishment in 1784 of a secular state board of regents, which, though not an actual university, was nevertheless called the University of the State of New York and was under civic control. Livingston, Smith and Scott also contributed greatly to the cultural enrichment of New York City with the founding of the New York Society Library, the city's first library open to the general public by subscription. The library is still in existence.

Society for the Propagation of the Gospel in Foreign Parts (SPG) A unique, quasi-public philanthropic organization founded in England in 1701 to strengthen Anglican Christianity and basic education in the American colonies. In its 82 years of existence in colonial America, SPG not only established hundreds of primary schools, it also assured the survival and dominance of the English language, English culture and Protestantism as the framework for American life.

Founded at the urging of the influential Anglican priest THOMAS BRAY, SPG was, from the beginning, unique for England and the Protestant world. In its missionary reach SPG

was something of a Protestant counterpart to the Roman Catholic Society of Jesus, or JESUITS. Chartered by the Crown, its head was the archbishop of Canterbury, and while undisguisedly furthering the interests of Crown and church, it nevertheless remained independent of both. A privately funded and managed philanthropy, it was the first such organization in the English-speaking world dedicated to converting other Christians (as opposed to heathens) to a specific Protestant sect.

Bray, who had visited religiously fractious Maryland, had been appalled by the failure of the Church of England to assume a significant role in the religiously and ethnically fragmented American colonies. He warned of "divers Romish priests and Jesuits," spreading atheism, infidelity and "popish superstition and idolatry" in the New World. To counter such influences, SPG recruited a force of more than five dozen missionaries to go to the colonies, establish stations, found churches and schools and recruit schoolmasters and catechists to educate children. Over the following decades, they established 169 missionary stations and more than 180 schools, stretching from New Hampshire to Georgia and from the Atlantic and New York City to the western frontier.

They distributed thousands of Bibles, prayer books, devotional tracts and school texts in English, German, Dutch and various Indian dialects. From their pulpits, classrooms and libraries, they not only brought Englishmen back to the Church of England, they also converted huge numbers of non-English European settlers and their children to Anglicanism, while at the same time building the loyalties of all to the British Crown. SPG purposely recruited French, Scottish, Irish, German and Dutch missionaries to win the religious and political loyalties of settlements made up of those nationalities. In addition to preaching, they catechized the young and ignorant. SPG schools, with about 40 children each, for a

total of 7,200 students during the society's strongest years, taught their charges to read and study the Holy Scriptures and "to write a plain and legible hand, in order to the fitting them for useful employments, with as much arithmetic as shall be necessary to the same purpose."

The SPG effort did not proceed without some setbacks. Settlements were attacked by hostile Indians, devastated by malaria, dysentery and smallpox epidemics or denounced by various dissenters—Quakers, Puritans and Methodists particularly—who had fled to the colonies to escape the Church of England. "Is it not enough that they persecuted [us] out of the Old World?" asked the Massachusetts Puritan minister Jonathan Mayhew in his *Observations on the Charter and Conduct of the S.P.G.* (1863). "Will they pursue us into the New to convert us here?—compassing seat and land to make us proselytes, while they neglect the heathen and heathenish plantations?" Despite fierce opposition, SPG scored enormous successes throughout the colonies. In addition to conventional schools, the society founded the first colonial charity schools for the poor, the homeless and the orphaned, in New York City. And, in its longest lasting contribution to American education, in 1754 it was responsible for the chartering of King's College (later, Columbia).

Moreover, SPG did its utmost to convert and educate Indians and slaves, but its efforts among the Indians seldom scored long-lasting successes. In 1702, a year after its founding, SPG established its first mission to the Indians, among the Yamasee in South Carolina, but a Yamasee uprising in 1715 closed the mission. In 1703, the Mohawk nation near Albany, New York, rejected an SPG offer to establish a mission, but in 1712 SPG did establish a school among the Mohawks and apparently attracted about 40 students. A buildup of hostility led to its abandonment in 1719. Undaunted, SPG established other schools among the Indians,

including a second among the Mohawks in 1769. Like its predecessor, the school did not endure.

SPG also mounted efforts to instruct and catechize African Americans. In 1704, SPG appointed a French Protestant, Elias Neau, to open a school for blacks in New York City. Neau conducted sessions in his house three evenings a week and went from house to house during the rest of the week to instruct, catechize, comfort and pray. Neau attracted more than 100 students to his school, including Indians and whites as well as blacks. Although originally charged with provoking a black uprising in 1712, he was declared innocent after authorities found that none of his students had participated. Neau's school continued to thrive until his death in 1722, after which it was gradually absorbed into the SPG charity school in New York City. Still another pioneering SPG effort to educate blacks took place in Charleston, South Carolina, where the botanist ALEXANDER GARDEN opened a school for Negro children. He purchased his first two students and eventually enrolled about 60 others, teaching them to read so that they might teach other blacks to read. The school closed in 1764 under circumstances that remain unclear.

Although all SPG churches and schools, including King's College, closed during the Revolutionary War, all reopened after the end of the war. The Church of England became the Protestant Episcopal Church in the United States, free of ties to the English Crown and the archbishop of Canterbury, and King's College reopened as Columbia College. SPG ended its work in the former American colonies in 1783. Its missionaries fled to Canada and the West Indies or returned home, and SPG renewed its missionary work in other parts of the world.

sociodrama A type of SIMULATION in which a teacher asks students to reenact spontaneously a real-life problem affecting one or more of the

students. Totally unrehearsed, sociodramas are designed to teach participants and observers an understanding of the genesis and consequences of the particular problem they explore.

Socrates (470–399 B.C.) Greek philosopher who developed a method of teaching based on questioning rather than lecturing students. Called the Socratic method and still a fundamental element of Western pedagogy, Socrates feigned ignorance of a problem that he presented to his students. He thus stimulated a student discussion, which he then guided, with rational argumentation, toward eventual discovery of definitions, truth and knowledge. (Such feigned ignorance by a wise teacher is still called Socratic irony.) Often, too, he would simply question an established “truth,” thus raising doubts in his students’ minds and provoking them into discussions that either proved or disproved the original premise. Socrates himself wrote no books or tracts, but his teaching techniques, philosophy and wisdom were recorded in detail by two of his students, the philosopher PLATO and the historian Xenophon. In effect, his philosophy called for a ceaseless search for truth, equating ignorance with vice and knowledge with virtue.

Born in Athens, possibly the son of a sculptor, he received the standard elementary education in literature, music and gymnastics, then studied rhetoric, dialectics, philosophy and Athenian culture of the Periclean Age. He was an infantryman in the war with Sparta, serving with conspicuous bravery in two battles. As a member of the legislative council, or *boule*, from 406 to 405, he was familiar with the leading figures of Periclean Athens but grew convinced he could better serve Athens as a philosopher and teacher. He spent much of his time in the marketplace and public resorts of Athens, luring passersby into dialogue and argument. Ridiculed by the playwright Aristophanes as a corrupter of youthful reasoning in the comedy

The Clouds (423 B.C.), Socrates was eventually charged by state authorities with blasphemy and corrupting the morals of the young by failing to teach them of the gods. He was sentenced to death. Although his friends, including Plato, arranged for him to escape (a common practice in Athens), he insisted on obeying Athenian law and on dying in defense of his belief in the value of knowledge over ignorance.

Socratic method A teaching technique whereby a carefully constructed series of questions guides students toward accurate definitions of terms and eventual solutions to specific problems. By limiting the scope of each question, the teacher can guide student discussion toward a series of obvious answers, inevitable conclusions and, eventually, a body of knowledge about a particular subject. Originated by SOCRATES in ancient Greece, the Socratic method is a forerunner of programmed instruction, in which a body of knowledge is broken down into a series of small, easy-to-learn bits of information, acquired through correct responses to a series of questions.

sodality An organized society, fraternity or sorority. Derived from the Latin *sodalitas*, meaning comradeship or club, sodality is sometimes substituted for the terms *fraternity* or *sorority* on some college campuses, especially when the society has been formed for charitable rather than social purposes.

software All materials associated with computer operations other than the actual machinery (the hardware). Essentially, software is a set of instructions for a computer, installed via a variety of media, including CD-ROMs, discs or the Internet, or created and installed manually in the computer, using the keyboard. Most software is grouped into two categories of programs—system software and application software. System software controls basic programs

that permit the computer to operate, while application software instructs the computer to perform specific, practical tasks such as word processing or accessing the Internet. Computer owners can purchase or copy an almost limitless variety of software, although the amount that any given computer can store is limited by computer capacity, and it can be more convenient to access software programs over the Internet just long enough to perform a specific operation without installing the software onto the user computer.

sorority A campus social society or club made up exclusively of women (from the Latin *soror*, meaning “sister”). Uniquely American and operationally identical to all-male FRATERNITIES, sororities are of a more recent origin than fraternities, in part because of the inability of women to gain admission to colleges and universities until the mid-19th century. The earliest sorority, Alpha Delta Pi, was founded at Wesleyan Female College in Macon, Georgia, in 1851. (The earliest American fraternity, a debating and literary society, was founded at Yale College a century earlier.)

Phi Beta Kappa, originally a men’s social fraternity, became coeducational in 1875, when the University of Vermont chapter admitted the first two women and the fraternity began converting into an honor society for students graduating college with high academic honors, outstanding character and other achievements.

As in fraternities, membership in sororities plunged during the civil rights movement of the 1950s and 1960s; national revulsion at their often discriminatory policies, even at publicly supported institutions, led some colleges and universities to ban fraternities and sororities entirely. From 1965 to 1972, sorority membership dropped about 40%. The 1970s and 1980s, however, saw a revival in the number of sororities and fraternities. Spurring the revival was the passage of state laws banning

the sale of alcoholic beverages to persons under 21, which forced student parties off campus and into private facilities.

After reaching record membership levels of about 200,000 in 1990, sorority membership once again began plunging, as the number of students on financial aid increased and left fewer undergraduates able or willing to afford the hundreds of dollars in annual membership costs. Many students were also repelled by an ever-increasing stream of ghastly headlines about alcohol and drug abuse—and occasional accidental injuries and deaths—arising from fraternity hazing and initiation rites. With grade-point averages of fraternity and sorority members well below the average of the general student population, serious scholars shunned them and membership dropped precipitously.

South Carolina Eighth of the original 13 colonies to join the Union, in 1788. South Carolina’s first free schools date back to 1710, two years before the Carolinas split into two colonies. The free schools were not, however, a public school system in the modern sense. Established by Anglican missionaries from the SOCIETY FOR THE PROPAGATION OF THE GOSPEL IN FOREIGN PARTS, the schools were extensions of an effort to Christianize “heathens.” They were few in number in what was essentially a wilderness populated by hostile Indians and ravaged by continual malaria, dysentery and smallpox epidemics. Although the society’s first mission to the Indians began in South Carolina in 1702 with the Yamasee tribe, it ended in failure after a Yamasee uprising in 1715. In 1743, another society missionary, the botanist ALEXANDER GARDEN, opened a school for Negro children in Charleston. He purchased the two first children he enrolled and eventually enrolled about 60 others, hoping to teach them to read and send them out to spread literacy among other blacks. The school was closed in 1764 under circumstances that remain unclear.

After national independence, South Carolina joined other southern states in making it a criminal offense to teach blacks to read and write. Although northern military authorities established some public schools during the post-Civil War RECONSTRUCTION period, state authorities segregated them by race after self-rule was restored. Moreover, legislators representing agricultural interests, which depended heavily on child labor, defeated all efforts to expand the public school system or fund existing schools adequately. The state condoned child labor until federal labor laws barred such practices in the late 1930s. The result was a public school system that was among the poorest in the nation in terms of educational quality, measured by virtually any standard. All efforts to improve the system were blocked by the fears of all-white legislatures that blacks would be the principal beneficiaries. Federal courts forced an end to segregation in the 1950s, but many schools remained segregated, in violation of federal law, until the 1980s, when a new, forward-looking governor, Richard Riley, took control of the state house and organized a concerted effort to lift the quality of the state's education from its abyss.

Rallying a coalition of business interests, labor organizations and educators, Riley, who later became SECRETARY OF EDUCATION in the Clinton administration, pointed out that poor education was the primary cause of economic stagnation and high unemployment in South Carolina. The coalition, in turn, pressured the state legislature to raise spending on education and force schools to raise educational goals and standards. In 1984, the legislature passed the Educational Improvement Act, increasing the sales tax to pay for school improvement, setting higher academic standards, expanding early childhood education and raising teacher salaries. Those efforts succeeded in raising the academic proficiency of the state's more than 690,000 elementary and secondary school stu-

dents to about average for the nation and well above every southern state except North Carolina and Virginia. The state has expanded its elementary and secondary school system to nearly 1,150 schools. More than 45% of students are minorities (41.7% black), and a staggeringly high 22.2% live in poverty.

The College of Charleston, founded in 1770, is the state's oldest institution of higher education. Although the College of Charleston is partially state-supported, Clemson University and the University of South Carolina are the official state universities, along with South Carolina State University, a historically black (it is still 95% black) LAND-GRANT COLLEGE founded in 1895. The University of South Carolina was founded in 1801 and now has three four-year campuses, at Columbia, Aiken and Spartanburg. Total enrollment is about 40,000 students, exclusive of the 17,000 students at Clemson, which was founded separately in 1889. Also state-supported is the Citadel, the Military College of South Carolina, which came under legal attack during the 1980s and 1990s for its refusal to admit women. In all, the state has 12 public four-year colleges and 21 two-year colleges. In addition, there are 25 private four-year colleges, including Furman University, an independent university founded in 1826, and Bob Jones University, a fundamentalist Christian school founded in 1927. There are also five private two-year colleges. The graduation rate at four-year colleges is 52.8%.

South Dakota The 40th state to join the Union, in 1889; South Dakota opened its first school in 1860. The strong Indian (largely Sioux) presence in the state—nearly 64,000 in a population of almost 764,000—continues to influence public education. Three of the state's nine four-year public institutions of higher education are tribal colleges. The tribal colleges are relatively small, rural institutions with no residence facilities. Oglala Lakota College, for exam-

ple, has 900 full-time men and women commuter students, all of them Native Americans. Founded in 1971 by the Oglala Sioux Tribal Council, it offers programs in business, teaching and human services at 10 regional centers spread over 5,000 square miles of the Pine Ridge Indian Reservation in the southwest corner of the state, as well as at a central campus at Kyle. Sinte Gleska University was founded a year earlier in Rosebud, where it offers more than 300 students undergraduate programs in communications and the arts and professional training in health, social services and education. Like Oglala Lakota College, Sinte Gleska has no residence halls. About 15% of its students are white, with the remainder either American Indian or Eskimo. The average age of undergraduates is 31, and 90% graduate. Enrollment at the state's four-year colleges, which includes 12 private colleges, is about 42,000, but the graduation rate is only 45.4%. There are five public two-year institutions—one of them a tribal college—and one a private two-year school.

South Dakota has only about 760 public elementary and secondary schools, with total enrollment of less than 127,000 students, whose average academic proficiency ranks them tied for seventh highest in the nation. Eighth graders rank eighth and fifth in the nation, respectively, in reading and mathematics proficiency; fourth graders rank 19th and 12th in those disciplines. Their excellent academic performance comes despite the lowest teacher salaries in the nation (30% below the national average) and the sixth-lowest spending per pupil (16% below the national average). Schools do, however, have a low student-teacher ratio of only 14:1, which is 12.5% below the national average, and minority students make up less than 14% of enrollment—10% American Indians who largely attend their own schools. Only about 7% of the state's school children live in poverty—less than half the national rate.

Southeastern Community College v. Davis

A unanimous, 1979 U.S. Supreme Court decision that federally funded colleges were not required to admit all handicapped applicants or to make "extensive modifications" of their facilities to accommodate disabled students. The decision represented a narrow, albeit significant, modification of the REHABILITATION ACT OF 1973, which barred exclusion of an "otherwise qualified handicapped individual" from programs receiving federal aid. The Court interpreted the meaning of "an otherwise qualified person" as "one who is able to meet all of a program's requirements in spite of his handicap."

In the case in question, Frances B. Davis, a practical nurse with a severe hearing disability, had filed suit against Southeastern Community College, Whiteville, South Carolina, for rejecting her application to the school's registered nursing program. The Court backed the school's argument that her disability and her dependence on lip-reading would not allow her to function "sufficiently" as either a student or as a registered nurse. The college pointed out that lip-reading would be of no value in an operating room or other area, where personnel wore surgical masks, or with incoherent patients. The decision, however, only sought to modify and define more precisely the phrase "otherwise qualified person" and did nothing to undermine the vast reach of the Rehabilitation Act.

Southern Education Board A group of northern philanthropists and southern reformers who sought at the turn of the 20th century to restore the economy and social structure of the South by establishing universal public education. In addition to expanding public education, the board sought to make schools more useful socially and to the individual by introducing vocational education into the curriculum and improving teacher training.

The board was organized at the 1901 Conference for Education in the South, which

brought together a group of Christian ministers and educators and a handful of northern progressive philanthropists such as Robert Curtis Ogden, GEORGE FOSTER PEABODY and JOHN D. ROCKEFELLER. Financed by Rockefeller's GENERAL EDUCATION BOARD, the Southern Education Board was designed to launch "a campaign of education for free schools for all the people" by flooding the press with news releases and feature articles, by attending meetings on education throughout the South and by pressuring legislators in every state. To keep conflict to a minimum, northern participants remained discreetly in the background, while southern board members led the struggle in the legislatures and communities of the South.

The board scored some notable successes. In Kentucky and Tennessee, it helped push through an assortment of laws in 1908 that established an enormously improved system of public schools and colleges. In Georgia, it helped obtain passage of a constitutional amendment permitting local taxes to finance public schools. By 1912, the state had established a system of public elementary schools and was well on its way toward establishing a system of public high schools. North Carolina had on its own elected an "education" governor in 1898 and was establishing a public school system when the General Education Board began its campaign. The board did, however, serve a useful purpose in North Carolina by providing grants and loans to small communities to encourage the building of public schools. Similarly, public school proponents had already won control of a 1902 constitutional convention in Virginia, with the result that the state was already beginning to expand and modernize public schools. Nevertheless, the board was able to strengthen Virginia's new public school system with grants similar to those in North Carolina.

The board did not, however, meet with success on a universal basis, despite its political

and financial power. In South Carolina, plantation and textile mill owners, who depended on child labor, controlled the legislature. Not surprisingly, it refused to vote funds to develop an adequate public school system that would have pulled children off the job and put them in classrooms. Moreover, even in states where the board did succeed in furthering the cause of public education, it did not succeed in getting education extended to blacks on an equal basis with whites. Indeed, a so-called education governor of North Carolina, who won election on a platform of universal education, explained quite clearly that he meant such education to be for white children only. Georgia's new public school system was also reserved for whites only. And in Virginia, the constitutional convention that created an expanded, modernized system of public education specifically limited black public education to instruction in reading the Bible and little more. The convention noted, with some degree of anger, that 2,500 existing schoolhouses for blacks were producing tens of thousands of literate black voters who might one day take control of state government, and it rejected the notion of expanding black education.

Spanish America Those areas of the Americas controlled by Spain during the colonial era, prior to 1800. After establishing a foothold in South and Central America and the Caribbean during the first half of the 16th century, Spain founded what is now the oldest continuing settlement of European origin north of the Gulf of Mexico, at St. Augustine, Florida, in 1565. Seeking to protect their trade routes through the Caribbean, the Spanish captured what had been the embryonic French colony of Fort Caroline. Florida remained a Spanish possession until the Seven Years War in 1762. A British victory forced Spain to cede Florida until 1783, when Spain repossessed it after siding with the American revolutionaries. By then, Spain had

also acquired France's huge Louisiana territory, which, together, with its holdings in Mexico, California and the American West and Southwest, made New Spain the largest European-controlled area in the Americas. The mammoth size of these holdings did not translate into any immediate effect on American education because of Spain's failure to establish large-scale civilian settlements.

Although the Spanish had explored California in the 1500s and 1600s, they did not establish their first permanent settlement there until 1769, in what is now San Diego. Interested primarily in exploiting mineral wealth, Spain limited education to Roman Catholic missionary efforts among the Indians. To that end, Spanish Franciscans built a network of 21 missions in California, but even these lost their influence after newly independent Mexico assumed rule over the territory in 1822. After American settlers gained control of the area in the 1840s, the missions were forced to close. Elsewhere, the Spanish had ceded the Louisiana territory back to the French in 1800 and lost control of Florida to the United States in 1819—all without ever having established any permanent civilian colonies that would influence American culture east of the Mississippi. The most lasting and somewhat distorted Spanish influence on American education can still be seen in the Southwest and in large portions of California, where Mexican culture—a conglomeration of Spanish and Indian cultures—predominated until 1848, when Mexico ceded California to the United States following the Mexican War.

Sparks, Jared (1789–1866) American educator, author and historian, responsible for introducing history as a standard element of the American curriculum. Born in poverty and forced to educate himself, his success as an autodidact earned him a scholarship to Phillips Exeter Academy, in New Hampshire, at the age

of 20. He earned his B.A. and M.A. at Harvard and became a Unitarian minister in Baltimore and then chaplain of the House of Representatives in 1821. He resigned in 1823 to move to Boston, where he bought the *North American Review*, which he transformed into the most influential literary magazine in North America. In 1825, he began collecting and studying historical materials, traveling across the United States and Europe to uncover, amass and publish an enormous body of research materials. The materials served as a foundation for one of the most remarkable bodies of historical studies ever produced and, in its time, certainly the most important.

Among the many historical works he wrote or edited were *The Life of John Ledyard* (1828), *The Diplomatic Correspondence of the American Revolution* (12 vols., 1829–30), *Life of Gouverneur Morris* (3 vols., 1832), *Writing of George Washington* (12 vols., 1834–37), *Remarks on American History* (1837), *The Life of George Washington* (1839), *The Works of Benjamin Franklin* (1836–40) and *The Library of American Biography* (25 vols., 1834–47). In addition, he was editor of *Essays and Tracts on Theology*. His historical works ranked with the poetry of Longfellow, the essays of Emerson and the novels of Alcott as the most influential body of written work in early 19th-century American society.

A leader of the Unitarian-Transcendentalist intellectuals of his era, he was named professor of ancient and modern history at Harvard in 1839, the first professor of nonecclesiastical history at Harvard and, indeed, in the United States. He organized Harvard's history department and in 1849 was elected president of the institution. He served for four years in a somewhat less than successful term as a reactionary administrator for that era, advocating the lecture system of teaching and strongly opposing student electives. After his death, his histories gradually fell into disrepute as researchers learned that he had amended, omitted and

rewritten whole passages attributed to historical figures. His aim, apparently, had been two-fold: to avoid offending or sully the reputation of historical figures he admired and to polish the writing of such figures.

Spartan education A harsh, physically oriented form of education dispensed in an atmosphere of strict military or quasi-military discipline. Now usually limited to military school education in the United States, Spartan education of a sort pervaded American boarding school life throughout the 19th century and the first half of the 20th.

It originated in the ancient Greek city-state of Sparta, a surprisingly small group of five simple villages at a pass leading to a rich, agricultural valley in the Greek Peloponnesus. Seeing themselves as defenders of the valley against other city states, the villages evolved into a military garrison by the sixth century B.C., and the villagers molded the upbringing of their children and their education into a system geared for war. Deformed children were abandoned and allowed to die. Girls remained at home to learn the domestic arts, while all boys began military training at seven. Assigned to barracks and trained by older men with military backgrounds, they spent the first two years as cadets, learning rudimentary military drill, the martial arts and politics. They spent the next 10 years in full-time military training, receiving full status as citizens of Sparta at 18 and then entering the military ranks at 20. Although permitted to marry, they lived in military barracks until the age of 30 and served in the military until the age of 60. Sparta defeated Athens in 404 B.C. and became the dominant Greek state until 371, when the Thebans defeated them, reducing Sparta to its original boundaries. Although Sparta seems to have prospered somewhat under Roman rule, it was destroyed by King Alaric and the Visigoths in 396 A.D.

spatial imagery The reconstruction in the mind of the form, surrounding space and relationships of out-of-view objects that the eye has previously seen or the imagination has envisioned. Spatial images are seldom exact replicas of the actual objects. The variation between what the actual eye and the "mind's eye" see is usually an accurate reflection of the student's aptitude in architecture, art, design, drafting, engineering, geometry, shop, map making, mechanical drawing and other programs requiring well-developed spatial imagery. A variety of nonverbal tests are available to measure aptitude for spatial imagery.

Spearman rank difference correlation coefficient (Spearman's RHO) A mathematical method of relating two different sets of rankings—I.Q. rankings and rankings on a reading test, for example—for the same group of individuals. Using a complex formula, a teacher can determine whether student rankings on a particular test have a direct, inverse or no relationship with rankings on another test. Thus, a reading test whose student rankings are the reverse of their intelligence-test rankings may have little merit as a measure of reading skills. Rank correlations range from -1.00 to $+1.00$, with the former indicating an inverse correlation, 0.00 indicating no correlation and $+1.00$ a perfect correlation.

special education A broad range of instructional processes designed to help students with one or more mental, physical or emotional handicaps obtain the maximum amount of education compatible with their physical and intellectual potential. Special education can range from custodial institutional care, at one end of the spectrum, to simple oral or written exercises assigned to a student by a regular teacher in a conventional classroom to help the student overcome a specific deficiency. Between the two extremes are formal and informal pro-

grams designed to meet the specific needs of an infinite variety of handicapped, or, as they are euphemistically called, “exceptional” students. These programs include students with a range of deficiencies, including learning disabilities, mental retardation, hearing impairments, speech impairments, visual impairments, emotional disturbances, orthopedic or other disabling handicaps and multiple handicaps with combinations of any or all of the above.

Although special education dates from the 19th century, its expansion into a broad-based element of conventional education began in the 1970s, with the enactment of two federal laws that opened the doors of public schools to the handicapped and mandated their absorption to the greatest degree possible into normal school life. In 1973, the REHABILITATION ACT outlawed discrimination against handicapped persons in education and mandated the elimination of all architectural barriers that might prevent a handicapped youngster from attending school. Two years later, Congress revised the Rehabilitation Act with the EDUCATION FOR ALL HANDICAPPED CHILDREN ACT, to improve public school education for the handicapped by underwriting a broad range of special education. Since then, teacher’s colleges have staged a vast expansion of their training in special education, with regular classroom teachers, as well as those preparing to become specialists in the field, expected to learn aspects of special education.

In 1988, Congress reauthorized and revised the Education for All Handicapped Children Act, renaming it the INDIVIDUALS WITH DISABILITIES ACT (IDEA) and provided funds to state and local school boards to develop and install advanced technology and equipment for educating children with learning deficiencies and other intellectual or physical disabilities. In 2004, Congress again reauthorized IDEA, appropriating more than \$10 billion and adding a groundbreaking program known as RESPONSE TO INTERVENTION, or RTI, which identi-

fies learning disabilities and other problems before they create academic difficulties and leave students so far behind their classmates that they require formal special education. RTI all but eliminates the need for special education for children whose learning difficulties are developmental, emotional or otherwise non-physiological. Together with state and local services, IDEA raised the amount spent on special education in the United States to more than \$80 billion a year and, by 2005, nearly doubled the number of children receiving special education to more than 6.5 million, or 13.5% of the school population. Of particular note, IDEA served more than 600,000 children aged three to five, thus intervening with preschoolers and possibly preventing the development of learning disabilities when the children enter school.

The vast majority of special-ed students able to attend public schools are assigned to regular classrooms for all or part of the day to receive instruction from regular teachers. Depending on the particular student and the degree of disability, a special resource teacher may be assigned to the classroom to provide special help—especially with students who, for whatever reason, might disrupt the classroom routine and interfere with the learning process of other students. In many cases, too, resource teachers may work with special-ed students privately or in small groups for part of the day, in specially equipped RESOURCE ROOMS for the learning-disabled. Classrooms reserved for all other special-ed students are designated “special” classrooms.

Basically, there are eight placement options for special education students, and most schools constantly monitor the students’ progress to move them into the least restrictive environment. In declining order of restriction and special education needs, these options are: the full-time residential school; full-time special day schools; full-time special classrooms

devoted exclusively to special-ed students in a regular school; regular classroom attendance with part-time special education in a special classroom; regular classroom attendance with part-time help or tutoring in a resource room (usually for students with learning disabilities); full-time attendance in regular classrooms with occasional help from itinerant specialists and full-time attendance in regular classrooms with occasional help from the regular teacher.

About 45% of children in special education receive help in their regular classrooms without disrupting their normal school routine, while 45% go to resource rooms for part of the school day for their special education and attend their regular classrooms the rest of the day. About 27% spend most of their school days in special classrooms apart from regular students, mingling with the rest of the student body only during free periods and some recreation periods. Of all disabled school-age youngsters, only about 3% attend special day schools entirely apart from regular schools, while fewer than 1% are in specialized residential facilities and an even smaller amount were homebound or in hospitals.

Of students who receive some form of federally funded special education, more than 51% have specific learning disabilities such as dyslexia, and nearly 20% have speech or language impairments. About 11% have some degree of mental retardation, and 8.4% have serious emotional disturbances. Children with other disabilities, such as hearing and visual impairments, orthopedic impairments, autism, etc., account for relatively small percentages of children in special education—usually less than 1%. In addition to the more than 5.9 million children ages six to 21 who receive school-based special education, 600,000 children under five receive preschool special education designed for preliterate youngsters and infants.

Special education services are available in conventional boarding schools as well as day

schools, and all provide one or more of four basic services: specialized instruction by trained special-ed teachers; curricular flexibility and adaptation to the student's capabilities; special teaching methods by both regular and special-ed teachers, adapted to the special-ed student's limitations, and special instructional materials designed for the particular student's disability.

(See also *DYSLEXIA*.)

specialized institution of higher education Any college or university that restricts its curricular or degree offerings to a limited number of fields or courses of study. The relatively few specialized four-year colleges and universities include the service academies, a handful of engineering schools such as Massachusetts Institute of Technology, and several graduate schools of science such as ROCKEFELLER UNIVERSITY. In contrast, many two-year nonresidential community colleges tend to be specialized institutions that tailor their vocational offerings to meet the specific industrial and business requirements of the region they serve.

Academic specialization at the college and university level dates back to the middle ages, when institutions of higher education prepared students for but one profession: the Catholic clergy. The first college founded in the American colonies—Harvard—also began as a specialized institution, to prepare young men for the Protestant ministry. Yale, then and now its arch rival, was also a specialized ministerial school. Diversity of academic offerings did not begin until the mid-18th century, with the opening of the College of Philadelphia (later, the University of Pennsylvania), which Benjamin Franklin founded as an academy to prepare young men for business, engineering and other professions needed to build a new society. Thomas Jefferson followed Franklin's example in founding the University of Virginia, with a broad-based curriculum of arts and sciences that conspicuously omitted theology.

Facing a declining interest in the ministry, Harvard, Yale and other colleges followed suit and began expanding their curricula at the end of the 18th century. By the middle of the 19th century, most offered a broad range of academic courses that included literature, the fine arts, mathematics, history, modern and classical languages and a range of science courses that continued to expand with the development and growth of chemistry, physics, biology, zoology and other sciences. As the social sciences developed, they were added to the curriculum.

speech The utterance of intelligible sounds and words in a sequence that effectively communicates thoughts to others. Once an integral part of elementary and secondary school curricula, speech instruction is now usually limited to special education by speech therapists or speech pathologists. Special education for speech disorders includes instructional programs for speech and hearing impaired students, speech therapy for children with cleft palates, and speech therapy for nonimpaired children with articulation problems such as stuttering, lisping, delayed speech, aphasia, voice problems and speech defects (see SPEECH PATHOLOGY). Until the last half of the 20th century, however, speech instruction had been a required element of education for all students since the Sophists began teaching oratorical skills in ancient Greece in the middle of the fifth century B.C. Under the rubric of RHETORIC, speech instruction included lessons in pronunciation, enunciation, public speaking and the careful fashioning of phrases.

Speech is a product of two elements: voice, or phonation, and articulation, with the former produced by expiring air through vibrating vocal cords in the larynx, and the latter produced by positioning of lips, tongue, teeth, jaw and palate. Voice produces variations in pitch, quality and intensity of speech, while articulation forms the unique sounds that dif-

ferentiate letters, syllables and words from each other.

There are three types of sound produced in speech articulation: labials, labio-dentals and palatals. Pure labials, such as "p," "m," "b" and the "ooh" sound, are produced with the lips only; labio-dentals, such as "f," are produced by contact of lips and teeth and palatals, such as "t" and "k," are created by contact of the tongue with the upper palate. Important in the teaching of foreign languages, palatals can be frontal or central, with the former involving exclusively the tip of the tongue in contact with the palate, as in the sound for "t." Central palatals are created by contact of the central part of the tongue only with the upper palate, as in the sound for "k."

Speech is a learned function, however, and physical or mental impairments that interfere with the learning process can produce speech impairments. Neuroses, psychoses and mental retardation often produce speech impairments, as do such physical impairments as brain damage, hearing loss, cerebral palsy and cleft palates.

speech pathology The study of communication disorders, including vocal, oral, auditory and comprehensive abnormalities. Among the many manifestations of such disorders are articulation problems such as stuttering, lisping, delayed speech, aphasia, voice problems and speaking defects, some of them congenitally generated, others born of trauma and still others the result of improper learning sequences. Neuroses, psychoses, mental retardation and brain damage are among the many causes of both congenital and acquired speech disorders. Physical disabilities such as cleft palates, cerebral palsy, hearing losses and paralyzes also produce speech disorders. Speech impairment may, however, also result from unconscious imitation of poor speech by parents and other influences in early childhood.

Although speech pathology engages a wide range of researchers, clinicians, physicians and academicians, the speech therapist or speech pathologist associated with elementary and secondary school education is concerned solely with identification and remediation of student speech disorders. Speech therapists and pathologists in schools usually work with students on an individual basis in RESOURCE ROOMS and with each student's teachers and parents to develop a broad remedial program. Because speech disorders can be the result of physical, neurological or psychological conditions, speech therapists and pathologists may also work with neurologists, otolaryngologists, psychiatrists or psychologists in treating speech disorders.

speed reading The perception, comprehension and intellectual integration of printed words and sentences at rates up to four times faster than the average individual's reading rate. The average reading rate of literate, English-speaking, American adults is 250 to 300 words a minute, while those who have acquired speed reading skills can absorb up to 1,000 to 1,200 words a minute. Speed reading is a learned skill limited only by the range and strength of individual peripheral vision. Instead of focusing on a single word, speed readers learn to use peripheral vision to incorporate words to the left and right of their central focus. Exceptionally gifted speed readers extend peripheral vision to both margins and even above and below their focal points to include blocks of print reaching from one page margin to the other. There are, however, physiological and psychological limits to the speed any individual can achieve, and for each individual there is a specific reading speed beyond which comprehension begins to decline.

There are a variety of speed reading methods, many of them self-taught, such as scanning and skimming. Scanning involves allowing the eye to travel rapidly across a page of print, without stopping to focus on individual words.

Usually used when searching for a specific name, date or figure, scanning is used routinely to search through telephone books, dictionaries and other references and produces little or no comprehension or intellectual integration of materials. However, the techniques of scanning can, under professional tutelage, be used to develop speed reading skills. Indeed, skimming is nothing more than scanning at rates slow enough to achieve partial comprehension of the materials being scanned. Instead of searching for a single fact or figure, as in scanning, skimming involves allowing the eye to settle for a fraction of a second on key words and phrases significant enough to convey the general meaning of the entire sentence or paragraph. Considerable training is required in English composition and sentence and paragraph construction for students to obtain a significant degree of comprehension while skimming or speed reading. On average, skimming 800 to 1,000 words a minute has been found to reduce comprehension by 50% to 60%.

speed test A standardized test designed to measure student ability to respond instantly in an anxiety-provoking situation—i.e., under pressure of examination. Speed tests consist of questions with low enough levels of difficulty to permit every student to respond correctly but not to complete the entire test—as in simple arithmetic computation tests in early elementary grades. Scores are based on the number of correct answers per minute, thus limiting the evaluation to speed rather than knowledge. Instant-response aptitude can affect performance on critical examinations of students of even the highest intelligence and degree of knowledge. An example is the battery of SCHOLASTIC ASSESSMENT TESTS used by many colleges as admission tests. Remedial training can improve instant-response skills if started early enough in the elementary years.

(See also POWER TEST.)

spelling The correct naming or writing of the letters of a word. Basic to reading and writing, the study of spelling, or orthography, has remained relatively unchanged since the Reformation, beginning with the learning of the alphabet, proceeding through the learning of syllabic sounds, and with the gradual learning of lists of words of increasing length, complexity and difficulty. In 1783, schoolmaster NOAH WEBSTER wrote and published the first spelling textbook in the United States, the first of three parts of his epic: *A Grammatical Institute, of the English Language, an Easy Concise, and Systematic Method of Education, Designed for the Use of English Schools in America*. In the tradition of English PRIMERS, the Webster speller began with the alphabet, followed by a syllabarium and lists of words spelled in the English way. Webster was obsessed, however, with helping his new nation achieve cultural independence from England, as a companion to political independence. In 1806, he published *A Compendious Dictionary of the English Language*, containing 5,000 more words than the great dictionary of 1755 by Dr. Johnson. Of greater import, it contained the first Americanized spellings that eliminated the “k” in words like musick and the “u” in words like honour, and it phoneticized the spelling of words such as centre by reversing the “r” and the “e.” Two decades later he published *An American Dictionary of the English Language*, which completed the task of Americanizing the English language into the words students now learn to spell in the United States.

Spelling instruction has changed considerably since Webster’s day. Most instruction now focuses more on words that students are likely to encounter than on esoterica aimed solely at open-ended vocabulary building. Depending on the instructional system, spelling instruction may or may not begin with mastery of the alphabet and the various sounds each letter can produce. When the alphabet is central to spelling instruction, students may then proceed

either to mastery of the syllabarium (syllables) and then to whole words or go directly from alphabet mastery to study of whole words. In the first instance, teachers usually rely on phonics, that is, the pronunciation or “sounding out” of the individual letter and syllable sounds of each word as they attempt to write it correctly. In the whole-word approach, teachers rely on the so-called “test-study-test” approach, in which students are asked to write words they have not studied before, then compare their personal, phonetic spellings to those on a master list and study any errors they may have made, before rewriting the words correctly.

(See also TOP-DOWN MODEL OF READING; WHOLE LANGUAGE.)

Spencer, Herbert (1820–1903) English social philosopher, whose pronouncements on education had a broad impact on the course of American (and English) education during the last decades of the 19th century. They came at a time when Darwinism was racking the American educational establishment with fierce debates over what should be taught in schools and colleges and how to reconcile scientific knowledge with Christian beliefs in the creation of the world and man. Spencer’s question, “What knowledge is of most worth?” lay at the center of the debate when he arrived for a lecture tour of the United States in 1882. His works had been published and widely circulated during the previous decades. His four essays published together under the title *Essays: Education, Moral and Physical* described the most worthwhile knowledge in unequivocal terms: “To prepare us for complete living is the function which education has to discharge, and the only rational mode of judging of any educational course is, to judge in what degree it discharges such function.” He divided “complete living” into five categories of activities designed to contribute to: self-preservation, the securing of the necessities of life, the rearing

and disciplining of children, the maintenance of health, social and political relations and the gratification of tastes and feelings. Complete preparation in each of these areas, he maintained, was possible only through the study of the sciences, both natural and social.

In effect, Spencer reignited the interest of leading American educators in the type of utilitarian education that Benjamin Franklin had espoused a century earlier in founding the academy that eventually evolved into the College of Philadelphia and the University of Pennsylvania. Most American educators of Spencer's era subscribed to the educational blueprint of Victorian England—namely, that the role of colleges was to provide the upper classes with a classical education based on languages, literature and theology, and that the primary role of elementary common schools was to teach children to read, study and believe in the Scriptures.

A student of evolution, Spencer reconciled the conflict between Darwinism and Christian beliefs by proclaiming the existence of two domains: the accessible domain of science and the domain of "the Unknowable," which was inaccessible except through worship. In establishing a credible duality between the knowable and unknowable, Spencer opened the door to the widespread study of the social sciences based on the application of Darwinism to the psychological, social and political, as well as the physical, development of humans.

Spencer's relatively simple philosophic separation of science from the world of the "Unknowable" provided a springboard for leading educators, led by Harvard President CHARLES W. ELIOT, to expand their practical and scientific academic offerings. Eliot would later write an introduction to the republication of Spencer's *Education*. Spencer himself contributed directly to that expansion by producing a body of knowledge that served as the basis for the new social science courses then developing. Among his many works were *Principles of Psychology*

(1855), *A System of Synthetic Philosophy* (1860), *Principles of Biology* (2 vols., 1864–67), *Principles of Sociology* (3 vols., 1876–96), *Essays: Scientific, Political, and Speculative* (3 vols., 1891) and *Principles of Ethics* (2 vols., 1892–93).

spiral curriculum A graphic term to describe a curricular design that constantly reviews previously mastered concepts while continually adding new ones. Unlike schedules of reinforcement, which apply to lesson plans, spiral curriculum is a broader term referring to curriculum design, with each new course reviewing concepts of the course taken in the same subject a year (or semester) earlier.

Spock, Benjamin (1903–1998) American, psychiatrically trained pediatrician whose books on infant and child care transformed the upbringing of American children and indirectly affected the course of American education. A graduate of Yale College and Yale Medical School, Spock had acquired a national reputation as a New York pediatrician by the 1930s. Bemoaning the lack of any child-rearing manuals that combined "sound pediatrics with sound psychology," he accepted an offer by Pocket Books, which had pioneered modern paperback publishing in 1939, to write such a book. The first printing of his *Baby and Child Care* appeared in 1946 and captured the minds and hearts of American parents, selling more than 500,000 copies in its first 10 months and about a million copies a year for decades thereafter.

Baby and Child Care revolutionized child care in the United States, warning parents not to take anyone's advice (including Spock's) too seriously, because books "deal in generalities . . . [and] can't go into all the possible variations." His book challenged widely accepted child-rearing practices of not showing too much affection to children, feeding them according to a rigid schedule and using strict discipline to teach them proper behavior.

Instead, he urged parents to “trust yourself,” show great affection and be “natural” with their infants and children. “Trust yourself,” he told parents, in making decisions about breast feeding. He urged parents to ignore thumb sucking and masturbation and to use pacifiers rather than restraints or punishment to discourage such behavior. Discipline, he said, should be administered as an expression of the family’s love and concern, to foster the child’s love, rather than as a form of punishment.

After 30 years and 30 million copies, Spock’s guidance had changed the way Americans raised their children. Angry critics, however, insisted that he had spawned excessive permissiveness in American family life, which then spilled over into American elementary and secondary schools. His millions of followers retorted that he simply eliminated unnecessary cruelty and harshness from child-rearing. Despite his critics, Spock succeeded in reversing centuries of traditional, religiously based child-rearing methods based on “beating the devil” out of sinful children. Moreover, in training generations of parents to be more permissive at home, he taught them to demand that their surrogates in child-care institutions—namely teachers and school administrators—treat children in a similar fashion, with a maximum of warmth, patience and understanding.

Sputnik The first artificial, Earth-orbiting satellite, launched into space on October 4, 1957, by the Union of Soviet Socialist Republics, then challenging the United States for global military, political and ideological supremacy. The Soviet success was particularly galling for American leaders who had publicly boasted for years about the technological supremacy of American capitalism over Soviet communism; officials had unhesitatingly predicted that the United States would be the first nation to send such a satellite into orbit. The no less boastful Soviet leadership had been conspicuously silent about

any advances in space exploration until their sudden, dramatic announcement on October 5, 1957, that a 184-pound satellite was actually orbiting the Earth. The announcement stunned the American people, shaking their confidence in capitalist technological superiority and leaving them with a sense of imminent vulnerability to attack by the Soviets. After the initial shock abated, the presence of Sputnik in the skies above provoked a frenzy of congressional and public criticism of the American educational system’s failure to train young Americans adequately in mathematics and the sciences. President Dwight D. Eisenhower called for a major federal investment to improve science and mathematics education, and the result was the NATIONAL DEFENSE EDUCATION ACT OF 1958, providing federal assistance to state and local school systems to strengthen instruction in science, mathematics, foreign languages and other subjects deemed critical to the ability to compete technologically with the Soviet Union and other potential enemies.

SQ3R An acronym for the study technique consisting of survey, question, read, recite and review. SQ3R asks students to organize work assignments by following these steps: survey materials to be studied by scanning chapter headings and lead sentences; list important questions to be answered; read the material in depth, underlining key elements of each paragraph; recite answers to the questions raised in step 2 and review all key, underlined materials read in step 3.

staff balance A euphemism for AFFIRMATIVE ACTION, and the attempt to build a school staff that reflects the racial, ethnic, age and gender makeup of the general population. Inspired by the CIVIL RIGHTS ACT OF 1964, the staff balance concept has proved impossible to implement in most American public elementary and secondary schools because the makeup of the teacher

population in various communities does not necessarily reflect that of the general population. The concept has subsequently broadened to include establishing an equity of workload among staff members and attempting to balance curricular strengths and staff competency to avoid, for example, the teaching of five courses in biology and one in physics, or the staffing of one department with experienced teachers while another languishes with inexperienced newcomers.

staff development The fostering and furtherance of professional skills of teachers, school administrators and nonteaching personnel, such as counselors, through a broad range of instruction. The latter is designed to improve the teacher's knowledge of subjects taught and to improve teaching, counseling or administrative skills and techniques. Among the activities available to achieve such goals are study leaves and sabbaticals, "development" conferences, peer teaching, work with outside consultants and pairing of less experienced teachers with more experienced mentor teachers.

Stafford Loans The largest and best known federal government program of educational loans to college students during the 1980s and 1990s. Officially renamed Federal Stafford Loans in 1993, the low-interest loans allowed any dependent student attending college at least half-time in the 1994–95 school year to borrow up to about \$35,000 over the four college years, regardless of family income. The total varied from year to year, with maximums set at \$2,625 for dependent freshmen, \$3,500 for sophomores and \$5,500 a year for juniors and seniors. Emancipated students—that is, students not declared as dependents on their parents' income taxes (or students without parents)—were eligible for successive annual loans of \$6,500, \$7,500, \$10,500 and \$10,500 during their four undergraduate years, and eman-

ipated graduate students were eligible for annual loans of up to \$18,500, up to a maximum total of \$74,000. Originally, students borrowed the money for Stafford Loans from banks at interest rates well below those charged for ordinary loans, with the government subsidizing the difference, to permit banks to earn their usual profits. By the mid-1990s, however, the government was paying more than \$9 billion a year in such interest, and former students had defaulted on \$25.5 billion worth of loans, knowing that the banks would make little more than perfunctory efforts to collect loans guaranteed by the U.S. government. To reduce its costs, the government reorganized the Stafford Loan program into two separate programs of direct and indirect loans. Under the William D. Ford Federal Direct Loan Program the U.S. Department of Education loaned funds directly to students and their parents through their colleges, while banks continued issuing traditional Stafford Loans to students and their families under the newly designated Federal Family Education Loan (FFEL) Program. About 500 colleges participated in the direct lending programs, which earned the government four cents for every dollar loaned, with borrower interest more than offsetting the cost of the program. Subsidized loans, in contrast, were costing the government 14 cents for every dollar loaned.

To cut government costs still further, the Department of Education divided both programs into subsidized and unsubsidized loans. All students, regardless of family income, were eligible for the unsubsidized loans, which required student borrowers to begin paying interest (more than 7% in 2006) monthly at the time the loan is issued, although repayment of principal was not due until after the student finished his or her studies. Only the neediest students were eligible for subsidized loans, whereby interest payments, as well as principal repayment, were postponed until the student finished college and graduate school

studies. Of about \$42 billion worth of Stafford Loans in 1998, almost 36% (about \$15 billion) were direct loans and about 64% (about \$27 billion) were subsidized loans. By the end of 1998, the loan reform program, coupled with stricter oversight by the Department of Education, had cut the default rate on student loans to 6.9%, from a peak of 22.4% in 1990.

Government-insured student loans were first authorized under the Guaranteed Student Loan Act of 1965 and expanded in 1973 and again in 1978, under the name Basic Educational Opportunity Grant (BEOG). "Stafford Loans" was one of the last in a series of names given to the program as it evolved over subsequent years from relatively small BEOG grants (\$226 to \$1,750 a year) into the Guaranteed Student Loan Program of 1980, with loans of up to \$12,500, and, finally, the Federal Stafford Loan Program.

(See also FINANCIAL AID; STUDENT LOANS.)

standardized test Any examination for which a norm and associated scale have been calculated on the basis of the exam's results among a well-defined, statistically significant population sample. Once standardized, the test can be used to compare characteristics of individuals or groups of individuals with the original population sample. To qualify as a standardized test, however, conditions under which such tests are administered must be strictly controlled and virtually identical each time and in every way. Among the most commonly used standardized tests in education is the SCHOLASTIC ASSESSMENT TEST I, which measures the verbal and mathematical skills of high school juniors and seniors.

Although designed to assure fairness to all test-takers, standardized tests seldom achieve that goal because of a variety of uncontrollable factors. No group of test-takers can be identical in every way to the original group on which the test norms were based. Moreover, ethnic,

racial and gender differences make it likely that otherwise identical test-takers will respond differently to the same questions. Administrators of the SATs have dealt with the first weakness by establishing a new norm—still scored as 500—for each year's SAT test-takers. The second weakness has proved more difficult to address: Women, who on average obtain higher high school and college grade-point averages than men, score lower than men as a group on the SATs, which are ostensibly designed to measure future academic performance at college.

standard language The vocabulary, grammar and usage of a tongue, as set down in standard references and generally agreed upon by professional users of the language—i.e., orthographers, lexicographers, grammarians, editors and language teachers. Standard language may, depending on the language and the country in which it is used, differ substantially from nonstandard language, or the language commonly used in conversation by the average person in daily life. Indeed, many nonstandard languages, such as French argot, a slang with origins in the highwayman culture of the Middle Ages, differ so substantially from standard language as to be unintelligible to many speakers of the standard language. There are, however, a variety of nonstandard languages, including slang-based argots, or "street languages" (see BLACK ENGLISH; VERNACULAR LEARNING), and dialects, which can range from minor regional variations of the standard language (as in the American South) to well-developed, stand-alone mongrel languages such as Creole or Yiddish, which combine the words and grammar of several different languages.

(See also NONSTANDARD ENGLISH.)

standards-based education See COMPETENCY-BASED EDUCATION.

standard score A test score that has been converted to a common, specifically defined scale that permits comparison of a variety of scores from differently scored tests. There are a variety of standard scores, usually based on means or medians, such as 0.00, with a standard deviation of 1.00, or 50, with a standard deviation of 10. In either case, all raw scores from a variety of tests would be converted to standard scores for accurate comparisons. Scholastic Assessment Tests (SAT), for example, are scored quite differently from ordinary classroom tests, with SAT scores ranging from 200 to 800 based on a mean, or average, score of 500. Regardless of the correct number of answers on the tests—60% correct, 68% correct or any other raw score—is always assigned 500 and the other SAT tests are graded accordingly. Classroom tests, on the other hand, are often scored from 0% to 100%, based on the number of correct answers. Until both sets of scores are converted to a common scale, with standard scores, a valid comparison remains impossible. Once the SAT mean of 500 and, for example, a mean score of 75% on a standardized history test, are converted to a standard score of 50 on a common scale, scores from both tests can then be appropriately compared.

(See also *SCALE*.)

Stanford Achievement Test One of the most commonly used standardized, norm-referenced and criterion-referenced tests for measuring such student skills as reading comprehension, vocabulary, spelling, language, math computation, math word problems, science and social studies. Designed for students in grades 1–9 and administered to groups rather than on an individual basis, the test evaluates actual student knowledge (criterion-based), while also comparing each child's scores with the norm for children in the same grade. Among other similar, widely used test batteries are the SRA (Science Research Associates) Achievements, the Iowa Test of Basic

Skills, the California Achievement Tests and the Metropolitan Achievement Tests.

Stanford-Binet Intelligence Test An individually administered test for measuring the intelligence quotient of children as young as two and adults. Of questionable value for adults of normal and superior intelligence, the Stanford-Binet Test was developed by Lewis M. Terman, a psychologist and Stanford University professor of education who revised the Binet-Simon Intelligence Scale in 1916, by dividing the mental age, as determined by the Binet-Simon Test, by the test-taker's chronological age. Terman called the result an Intelligence Quotient and developed a scale whereby the average I.Q. for a subject of any age was 100, with any I.Q. falling between 90 and 110 considered normal. Scores about 110 were superior and those below 90 inferior. Children whose I.Q.s ranged between 75 and 50, 50 and 25, and below 25, respectively, were categorized as educable, trainable and custodial. Administered under strictly controlled conditions, the test has been revised many times and remains heavily dependent on verbal and language skills.

Stanford University A private, nonsectarian university generally considered the most academically demanding institution of its kind west of the Mississippi. Renowned the world over for its academic standards, Stanford was founded in 1885 by railroad magnate and former California governor and U.S. senator Leland Stanford, in memory of his only son, Leland Stanford, Jr. The 15-year-old had died a year earlier from typhoid fever while the family was traveling in Europe. His father founded Leland Stanford Junior University with a gift of 9,000 acres, on which the family home was located, and an endowment of \$21 million. Officially opened in 1891, the undergraduate school offers a broad-based curriculum in the arts, sciences and professions to about 6,400

undergraduates—equally divided between men and women. Among its seven graduate schools (with nearly 8,000 students) is the famed Hoover Institution on War, Revolution and Peace, founded by president-to-be Herbert Hoover in 1919 as a center for advanced interdisciplinary study of 20th-century domestic and international affairs. Stanford's endowment is more than \$10 billion.

stanine An interval on a scale of nine intervals. An acronym of the words standard nine, a stanine scale uses a mean of 5.00, with a standard deviation of plus or minus 1.96. A far broader, and therefore less precise, method of measuring a distribution of scores than PERCENTILES, the stanine distribution was developed during World War II by the Army Air Force Psychology Program as a broad method of grouping test scores into relatively comparable categories. Handy as a quick and easy way of evaluating test scores in the classroom situation, a bell-curve distribution of stanine-scale scores would see 20% of the population falling into the fifth or middle stanine, with 17% each in the fourth and sixth stanines, 12% each in the third and seventh, 7% each in the second and eighth stanines and 4% each in the first and ninth stanines.

Starr, Ellen Gates (1859–1940) American social reformer and cofounder, with Jane Addams, of HULL-HOUSE, the flagship organization of the settlement house movement in the late 19th and early 20th centuries. Born in the Illinois wilderness and educated in a one-room schoolhouse, she and Addams met as students at Rockford Seminary, Rockford, Illinois, where they became close, lifelong friends. It was Addams who conceived the idea of Hull-House and was its driving force, supplying most of the money and serving as chief administrator. Starr, however, provided Addams with the friendship and moral and emotional support

needed to make the project succeed, and she made specific contributions that helped raise Hull-House to national prominence as an educative institution.

For Starr, the liberal arts she had studied at Rockford held ennobling powers, and she was appalled at their absence in the common schools and daily life of the Chicago slums, where she and Addams founded Hull-House. Astounded that immigrants had lost all their capacity to create folk art, she was determined to bring art, sculpture, literature and the other fine arts into the area. She organized reading clubs, decorated the walls of Hull-House and nearby schools with murals and reproductions of great paintings, and founded the Chicago Public School Art Society.

Life at Hull-House amidst the poor, however, gradually changed her point of view. Abandoning the settlement house approach, she helped form an Illinois branch of the National Women's Trade Union League, determined to do battle against sweatshops, child labor and low wages. "The soul of man in the commercial and industrial struggle is in a state of siege," she wrote in 1895. "For the children of the 'degraded poor' . . . there is no artistic hope outside of a miracle." In 1896, 1910 and 1915, she walked the picket lines with striking textile and other workers. She organized mass rallies, collected money, delivered fiery speeches, protested to the press and public officials and collected and carried food to the needy. Arrested for "interfering with a police officer in the discharge of his duty" in a 1914 restaurant workers' strike, she was acquitted by a jury that ruled the charges implausible, after seeing her fragile, bespectacled face and slight, 100-pound frame. Her activism caused considerable embarrassment for Addams, who tried to steer Hull-House clear of politics and maintain an atmosphere of tolerance for all points of view. World War I brought an end to Starr's activism. She converted to Roman Catholicism and eventually joined a convent.

state board of education A body responsible for supervising public education throughout a state. Often called a board of regents, the state board of education's responsibilities and powers vary widely from state to state. In some states, boards have sweeping powers to direct virtually every detail of public education, including lesson plans and textbook selection. At the other extreme are states that leave all functional powers in the hands of local school boards and limit state board responsibilities to broad policy making. The majority of state boards, however, have certain common responsibilities. In addition to setting statewide educational policies and goals, they usually appoint the chief school officer in the state and determine the state department of education's budget. They also serve as a liaison with congressional committees and federal government agencies involved with education. Depending on the state, some boards have responsibility for supervising higher education as well as elementary and secondary education. Other states have separate boards for each, while some states have still another separate board responsible for vocational education. Again depending on the state, board of education members may be appointed by the governor, publicly elected or serve *ex officio*, with length of service varying from two to 15 years, but usually running four to six years.

state department of education A state agency charged with certification of schools, certification of teachers, distributing federal and state funds to school districts and educational institutions, recommending legislation affecting education to the governor and state legislature and enforcing state education laws. Headed by the state's chief state school officer, who is variously known as the commissioner of education or state superintendent of education, the state department of education is responsible either to the state board of education or the governor, depending upon the state.

state educational grants for students Any of a wide variety of direct awards totalling about \$2.5 billion a year from state governments to all resident students who attend institutions of higher education in the state. Most states offer some form of aid to college students, some of it based on need, some on academic or other form of merit. Some carry provisos that the money be spent only at a college within that state or at a state-operated public college. Eight states offer "portable" scholarships for residents to use at out-of-state colleges. State grants range from as low as a token of several hundred dollars to as much as \$5,000 a year, depending on need. In addition to universally available grants, special state grants are available to disabled and disadvantaged students.

state educational support The direct financial contributions of state government to public education in each state. In 2000, the states provided 48% of all public and elementary school funding and nearly 36% of all funding of public institutions of higher education.

State contributions to public elementary and secondary education varied between 45% and 50% during the last two decades of the 20th century. Only a century earlier, when public schools relied largely on local taxation for their revenues, the average state contribution was 15%. It climbed above 30% by 1940, reached 40% in 1970 and peaked at 49.7% in 1986. It dropped back to 46.4% in 1991, when 47% of school revenues were derived from local property taxes and 6.6% from the federal government. In 1993, however, the decline in the percentage of state contributions to public elementary and secondary schools halted and began reversing after a series of state-court decisions declared the traditional system of paying for schools with local property taxes unconstitutional. The courts held that the system automatically fed more funds into schools in wealthy areas, with higher property values,

than in poor areas, with low property values, thus depriving poor children of equal educational rights guaranteed by most state constitutions. In response, Michigan in 1994 abandoned locally collected property taxes as a method of paying for schools. Instead, such taxes were paid directly to the state, which then redistributed them equally to each school district on a per student basis.

State governments spent a total of \$56.7 billion on higher education in the 1999–2000 academic years, with more than 97% flowing to public institutions and the rest to private colleges and universities. State revenues provided 36% of all revenues received by public institutions and about 2% of the revenues of private institutions. States awarded about \$3.7 billion in financial aid to students, with 80.5% of the total need-based.

(See also SCHOOL FUNDING.)

state education laws The state laws that, at a minimum, legislate the duration of compulsory education, attendance quotas, graduation requirements, teacher certification and funding procedures. Education laws, which dictate how education must be dispensed, are distinct from the basic principle guaranteeing all children the right to public schooling in each state, which is usually contained in the state constitution. A state education law, however, is usually what directly requires all children to obtain schooling and sets the minimum age at which they may legally withdraw.

The extent to which state laws determine local school operations varies widely from state to state, with some state laws giving state government control over the most minute elements of education, including even classroom lesson plans and textbook selection, and others leaving day-to-day operations to the discretion of local authorities. In general, the more elaborate and extensive the reach of state education laws, the more local authority, including that

of school administrators and teachers in the classroom, is reduced. Educators agree that teachers with little authority to design individual lesson plans or select appropriate textbooks are seldom able to exert much authority over, or obtain the respect of, their students.

States with the most elaborate education laws that strip local schools of authority generally have the poorest student academic achievement. In 1973, the EDUCATION COMMISSION OF THE STATES issued a *Model Legislation Report*, saying that state laws should be limited to broadly worded, policy-setting frameworks that define school functions, determine who can and must attend school and at what ages, set broad, state-wide educational standards and requirements for entering and graduating, determine funding methods and set requirements for becoming a teacher.

states, educational comparisons Any of a variety of methods that rank the quality of each state's public elementary and secondary school instruction in relation to that of other states. There are two basic methods: a state-by-state comparison of student academic proficiency measured by standardized tests and a comparison of various key characteristics of each state's public education systems and its resources. Here is how the states ranked in student academic proficiency as measured by NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS testing in 2005:¹

1. Massachusetts
2. Minnesota
3. New Hampshire
4. Vermont
5. North Dakota

1. Where no ranking appears by the name of a state, it ranked tied with the state above it on the list. Thus, New Jersey, South Dakota and Wyoming tied for 7th; Maine and Kansas tied 11th; etc.

- 6. Montana
- 7. New Jersey
 - South Dakota
 - Wyoming
- 10. Virginia
- 11. Kansas
 - Maine
- 13. Ohio
 - Washington
- 15. Connecticut
 - Delaware
 - Wisconsin
- 18. Iowa
 - Pennsylvania
- 20. Colorado
- 21. Nebraska
- 22. Idaho
- 23. New York
- 24. Indiana
 - Texas
 - Utah
- 27. Oregon
- 28. North Carolina
- 29. Maryland
 - Missouri
- 31. Michigan

- Average U.S.**
- 32. Illinois
- 33. Kentucky
 - South Carolina
- 35. Florida
- 36. Alaska
- 37. Arkansas
- 38. Rhode Island
- 39. Oklahoma
- 40. Georgia
- 41. Tennessee
- 42. West Virginia
- 43. Arizona
- 44. Louisiana
 - Nevada
- 46. California
- 47. Hawaii
- 48. Alabama
- 49. New Mexico
- 50. Mississippi
- 51. District of Columbia

The second method of comparing the quality of state public education systems is to compare key characteristics such as spending per pupil, school spending as a percentage of all government spending, average teacher salaries, pupil-teacher ratios, graduation/drop-out rates, teacher input and authority over educational policies and the extent of student social problems such as poverty, substance abuse, teenage pregnancies and school violence. Accurate statistics for all of these characteristics are not always readily available. Of

	Academic Proficiency	Pupil-Teacher Ratio	Expenditures per Pupil	Teacher Pay	Poverty	Minorities
Massachusetts	1		5	6	32	27
Minnesota	2				46	37
New Hampshire	3				47	47
Vermont	4	1	6		38	48
North Dakota	5	6			16	45
Montana	6				23	41
New Jersey	7	4	1	3	40	16
South Dakota	7	9			49	40
Wyoming	7	3			43	44
Virginia	10	5			45	20
Kansas	11				28	32
Maine	11	2	10		32	50

	Teacher-Pupil Ratio	Academic Rank
Vermont	11.8	4
Maine	12.3	11
Wyoming	12.5	7
New Jersey	12.7	7
Virginia	13.0	10
North Dakota	13.2	5
Nebraska	13.5	17
South Dakota	13.6	7
Connecticut	13.7	14
New York	13.7	24
Iowa	13.9	16

	State Spending per Pupil	Academic Rank
New Jersey*	\$11,793	7
New York	11,218	24
Connecticut	10,577	14
Massachusetts	10,232	1
Vermont	9,806	4
Rhode Island	9,703	34
Alaska	9,564	42
Delaware	9,288	22
Maine	8,818	10
Maryland	8,692	31
Wisconsin	8,243	13
Pennsylvania	8,210	22

	Teacher Salaries	Academic Rank
California	\$56,283	46
Connecticut	54,362	14
New Jersey	54,166	7
Michigan	54,071	26
New York	52,600	24
Massachusetts	52,043	1
Pennsylvania	51,800	28
Illinois	51,289	17
Rhode Island	51,076	34
Delaware	50,772	22
Alaska	49,685	42
Maryland	49,677	31

*The District of Columbia spends the most per pupil—more than New Jersey—and its students rank last in the nation academically in both reading and mathematics proficiency.

those that are, some, such as spending on education, have surprisingly low correlation with student academic achievement, while others, such as neighborhood economics and ethno-racial makeup of the student body, have surprisingly high correlation with academic proficiency. Here are the 12 states ranked highest in student academic proficiency, with their rankings by key characteristics such as pupil-teacher ratios, expenditures per pupil and average teacher pay. Where no ranking is listed, it means the state ranked below the top one dozen in that category.

Interestingly, only four of the 12 states ranked in the top one-dozen states in state expenditures per pupil and only two ranked in the top 12 in teacher salaries, but seven ranked among the 12 states with the lowest pupil-teacher ratios, and seven ranked among the 12 states with the lowest poverty rates and the lowest percentages of minority students. In contrast, here are the academic rankings of the states that ranked among the top 12 in each of the key characteristics deemed important to educational quality by many educators and state legislators.

On average, there seems to be little correlation between above-average state spending on education and student academic achievement, although Massachusetts, Connecticut and New Jersey might argue the contrary, and educators in states with poor academic proficiency might argue that spending is too low to produce improvements in student performance. Still others would point out that state spending per pupil is relevant to academic performance only when costs of athletics, recreation and nonacademic ancillary services are factored out. In essence, however, it is unclear from the above figures whether increases in spending necessarily increase academic quality. On the other hand, there seems little question about the statistical relationship between low student-teacher ratios and academic achievement, and few

	Poverty Rate	Academic Rank
Arkansas	25.0%	35
New Mexico	24.1	49
Mississippi	24.0*	50
South Carolina	22.2	34
Louisiana	21.3*	45
Alabama	21.1*	48
West Virginia	20.5	42
Tennessee	20.4	40
Arizona	20.1	43
New York	19.0	24
Georgia	18.4	38
Oklahoma	18.0	37

*Based on 2005 test scores before Hurricane Katrina devastated the Gulf Coast.

	Percentage of Minority Students in School Population	Academic Rank
Hawaii	79.9%	47
New Mexico	65.7	49
California	65.0	46
Texas	59.1	26
Mississippi	52.7	50
Louisiana	51.3	45
Arizona	48.7	43
Florida	47.5	35
Maryland	47.6	31
Georgia	46.2	38
Nevada	45.5	45
South Carolina	45.3	34

educators would argue that individual attention does not enhance learning.

Finally, there is unpleasant, but incontrovertible statistical evidence that academic proficiency declines with two factors that seem inextricably tied to each other: increased poverty and high proportions of minority students in the school population. Unfortunately, poverty afflicts the nation's two largest minorities—Hispanics and African Americans—to a far greater degree than most other racial and ethnic groups. It is not a coincidence that students in the District of Columbia, which has the nation's highest poverty rate of 30.9% and the highest minority concentration, 95.4%, rank lowest in the nation in academic proficiency—despite teacher salaries that rank higher than in 40 states. Here are the states with the highest poverty rates among school-aged children and their student academic-proficiency rankings:

With but one exception, New York, 11 of the 12 states with the nation's highest poverty rates among children rank among states with the nation's lowest student academic proficiency. The chart ranking the percentage of minority children in the public school population is no more encouraging.

See also GRADUATION RATES

State Scholars Initiative A program of federal grants to low-income college freshmen and sophomores who have completed “a rigorous secondary school program of study” and to college juniors and seniors majoring in math, science, engineering and other areas deemed critical to national defense and foreign policy. Developed in 2006, the State Scholars Initiative began as a two-part program, the first element providing grants ranging from \$750 to \$1,300 to low-income students who completed a high-school curriculum deemed “rigorous” by the U.S. Department of Education, as spelled out in the model curriculum it published in 1985 (see CURRICULUM, PUBLIC SCHOOLS). When the State Scholars Initiative was proposed, about 300 school districts in 15 states applied to participate. Most states balked at the proposal, not wishing to allow a federal department to intrude on state and local prerogatives to determine school curricula. Like the NO CHILD LEFT BEHIND ACT OF 2001, the State Scholars Initiative was seen as a gross violation of the Tenth Amendment to the Constitution, which specifically leaves to the states jurisdiction over all areas not covered by the first nine

amendments. The word *education* does not appear in those amendments and, indeed, was purposely omitted by the authors, who deemed it inappropriate for a distant, central government to abridge the collective rights of parents to educate their children as they deemed appropriate to local needs and conditions.

The second element of the State Scholars Initiative is a supplement to both the PELL GRANT program and the NATIONAL SECURITY LANGUAGE INITIATIVE, the former being a program of need-based grants ranging up to about \$4,000 a year and the latter being a U.S. Defense Department program to pump more than \$100 million into college foreign-language departments to fund the teaching of Arabic, Farsi, Chinese and other languages of nations and geopolitical areas of the world deemed critical to American foreign policy interests. The 2006 State Scholars Initiative broadens the scope of "critical" studies to include the sciences, mathematics, technology and computer science, and engineering, as well as critical languages, and offers supplemental grants (in addition to Pell) of up to \$4,000 to college juniors and seniors with a 3.0 grade point average as sophomores who major in one of the critical studies.

state superintendent of education The highest ranking educational officer in a state, with responsibilities as the chief executive officer of the state board of education and the chief administrative officer of the state department of education. Called the commissioner of education in some states, the state superintendent of education may be popularly elected, appointed by the board of education or appointed by the governor—for four years in most states.

State University of New York (SUNY) The world's largest university, spread over 64 campuses, with 42 two-year community colleges and 22 four-year institutions. State-supported,

the university was established in 1948 by an act of the New York State legislature, which grouped a variety of existing, state-supported institutions (some dating back to the 1820s) under a single administrative umbrella and authorized funds for constructing new colleges to blanket the state with enough institutions to serve every area. SUNY's goals were and are "to educate the largest number of people possible at the highest level, including educationally and financially disadvantaged groups." Enrollment reached nearly 400,000 in 2000. With a faculty of more than 15,000, SUNY offers more than 1,500 programs leading to a bachelor's degree, more than 950 master's degree programs and more than 300 doctoral programs. Governed by a board of trustees and a chancellor who serves as chief administrator, SUNY delegates day-to-day administrative authority to the presidents of each college. SUNY is one of two major, public higher education systems in the state, the other being the CITY UNIVERSITY OF NEW YORK.

Stead, William Thomas (1849–1912) Crusading British journalist whose analysis of "the secret of American success" spurred the spread of universal public education in the United States and Britain. Publisher of the periodical *Review of Reviews*, Stead devoted the entire annual issue in 1902 to "The Americanization of the World." Predicting that the nation with the most efficient and effective education system would eventually dominate the world, Stead called American commitment to universal education one of America's three "secrets of success" (the others being production incentives and espousal of democracy). In defining universal education, Stead pointed out that the United States offered most communities not only elementary and secondary schooling but also access to colleges, universities, libraries and technical institutes: "Until a change comes over the spirit of our country

[Britain], and society . . . recognizes that unless our people are educated the game is up, we shall not see any material improvement."

Stead had overestimated the extent of universal education in America. At the time, only about 10% of American children ever completed high school. The vast majority were exploited in fields, mines and factories at abysmally low wages and under intolerably harsh working conditions. Stead's publication, however, had almost as wide a circulation in the United States as in Britain. Indeed, his jailing in England for exposing the outrages against women and children in the workplace made him somewhat of a hero among the growing number of social reformers crusading for women's suffrage and child labor laws in the United States. When *The Americanization of the World* reached social and education reformers, it served as an impetus for expansion of public education in both nations.

Steiner, Rudolf (1861–1925) Austrian social philosopher and scientist who developed a spiritual and mystical doctrine called anthroposophy, an outgrowth of which was the Waldorf school movement and the development of more than 400 Waldorf schools in more than 30 nations, including about 20 schools in the United States. Anthroposophy places humans rather than God at the center of life, with knowledge a door and materialism a barrier to developing one's spiritual capacity, or "higher self."

Stevens Institute of Technology The world's first college to offer a degree in mechanical engineering. The college was established in 1870, under the will of Edwin Augustus Stevens (1795–1868), a member of the most successful family of inventors in American history. Born in Hoboken, New Jersey, Stevens was a son of John Stevens (1749–1838), a pioneer in the development of steam engines who built a steamboat in 1803 (three years before Robert

Fulton's *North River Steam Boat*) and launched the world's first oceangoing steamboat in 1808. In 1825, he built the first steam locomotive and in 1830 organized the first railway company in the United States, the Camden & Amboy Railroad and Transportation Company. To protect his inventions, he had convinced Congress to pass the first patent law, in April 1790. Both his sons worked with him during his lifetime and helped manage his vast business holdings, building the railway into one of the most successful enterprises in the United States. His older son Robert (1787–1856) invented the T-rail, the railroad track in use today throughout the world. Together, Robert and his younger brother Edwin designed and invented new types of ships, including some of the first ironclad ships for the United States Navy.

In willing money and his family's Hoboken land holdings to found Stevens Institute, Edwin was determined to raise the art of invention from a shop craft to a science. The founding trustees of the college coined the term "mechanical engineer" and designed the first curriculum leading to a bachelor's degree in that discipline. One member of the faculty founded the American Society of Mechanical Engineers in 1880. Now coeducational, Stevens Institute of Technology has about 1,700 undergraduates enrolled in bachelor's degree programs in science, computer science, engineering and the humanities. There is one graduate school, with nearly 3,000 students.

Stiles, Ezra (1727–1795) Connecticut-born scholar, educator, cofounder of the College of Rhode Island (later, Brown University) and president of Yale College during the turbulent Revolutionary War period. A Yale graduate and a tutor there, he was the son of a Congregationalist minister and was himself licensed to preach in 1749. In 1755, he became pastor of the Second Congregational Church of New-

port, Rhode Island, where he quickly gained notoriety for his nontraditional views. Remaining an active scholar, he corresponded with such learned men as Benjamin Franklin. He became a leader of the American Philosophical Society, which Franklin had founded, and gained fame as a political and social radical.

An outspoken advocate of American independence from England, he also was an abolitionist (he freed his own slave) and ecumenist and associated freely with Jews and all denominations of Christians except Anglicans, whom he believed to be servants of the Crown. Forced by English authorities to flee Newport when the Revolutionary War broke out, he spent brief periods in Boston, Portsmouth, New Hampshire, and several other New England towns. In 1777, he accepted the presidency of Yale, which was in turmoil and, according to one Tory alumnus, a hotbed of "sedition, of faction and republicanism." Because of his own radicalism in favor of independence, Stiles was well received at Yale. At the time, many students had taken up arms to defend New Haven against British attacks, and he himself led a heroic student assault on advancing British troops.

The war and the removal of Yale to the countryside made it impossible for him to assume his duties fully until 1778, but he managed to calm student fervor and get them back to classes, most of which he taught himself. Although a prolific writer, he published little during his lifetime and earned a place in American education history largely because of his efforts to liberalize, secularize and Americanize college education and because of his influence on other college educators of the day. Many of his works were not published until 1901, in a three-volume work entitled *Literary Diary*, edited by F. B. Dexter.

stimulus-response theory A concept developed by Russian physiologist Ivan Pavlov

that all behavior—both learned and unlearned—is the product of some stimulus. Central to the behaviorist school of psychology, the stimulus-response theory holds that each learned response is the result of adequate repetition of a specific stimulus, with physical stimuli usually producing automatic or unconditioned responses, and psychological stimuli usually producing unconditioned or learned responses. Pavlov repeatedly sprayed meat powder into a dog's mouth, producing the automatic, unconditioned, physical response of salivation. When a bell was sounded each time the meat powder was introduced, the dog gradually developed a conditioned or learned response of salivating at the sound of the bell alone. The stimulus-response theory conflicts with pleasure-pain theory whose proponents would argue that the dog's learning to salivate at the sound of the bell was the result of its association with the pleasure of the meat powder. Although each theory gave rise to its share of classroom teaching approaches, most modern teaching techniques attempt to take advantage of the best of all learning theories.

storytelling In education, an age-old method of instructing children in language, communication and listening skills, as well as developing their appreciation of literature and imparting information about history, folklore, moral values and religion. An especially entertaining, and therefore effective, method of educating children and motivating them to read, storytelling is considered an essential element of the daily curriculum in preschool, kindergarten and the early elementary grades in all effective schools and, indeed, is mandated in kindergarten education in a number of states. Led by a teacher or librarian, storytelling may be accompanied by a variety of audiovisual materials, including recorded music, sound effects, film clips or live, dramatic acting out of various story elements. As they reach an appropriate age, students themselves

often take turns reading stories to their classmates, to improve their reading and oratorical skills.

Stowe, Calvin Ellis (1802–1886) Congregationalist minister, educator and pioneer in the public school movement. Born in Massachusetts, Stowe graduated from Bowdoin College, Maine, and Andover (Massachusetts) Theological Seminary, but entered teaching, first at Bowdoin, then at Dartmouth College, where he was professor of Greek. In 1832, he accepted the chair of biblical literature at Lane Theological Seminary in Cincinnati, Ohio, which was founded and directed by the famed American churchman Lyman Beecher, with whom he formed a deep and lasting friendship. He eventually became a member of the Beecher family, marrying Beecher's daughter Harriet and actively participating in the campaign by another daughter, Catherine, to Americanize immigrant children by establishing public schools throughout the West and training teachers to staff them. Stowe helped found the Western Literary Institute and College of Teachers to promote public education.

In 1836, the year he married Harriet Beecher, he was appointed by the Ohio state legislature to spend a year visiting and surveying schools in Europe and, most especially, Prussia, which was renowned for its effective system of universal public education. In 1837, his *Report on Elementary Instruction in Europe* became one of the most influential documents in the history of American public school education. The report detailed the advantages of the Prussian system, with state support of local schools, state-controlled teacher training and a state-determined curriculum. The Ohio legislature ordered 10,000 copies to distribute among all school districts in the state, and the legislatures of Massachusetts, Michigan, North Carolina, Pennsylvania and Virginia ordered enough reprints to do the same in their states. Carrying,

as it did, the name of someone so closely tied to so prestigious a New England clergyman as Lyman Beecher, the report provided enormous impetus to the nascent public school movement in New England.

Stowe taught at Lane Seminary until 1850, then returned to Bowdoin to become a professor of religion for two years and, finally, returned to Andover Theological Seminary as professor of sacred literature. While at Bowdoin, his wife HARRIET BEECHER STOWE, who had long supplemented her husband's meager income from teaching by writing stories and sketches for magazines, wrote *Uncle Tom's Cabin*, a work her abolitionist husband had strongly encouraged her to undertake. Ill-health forced his resignation and retirement from Andover in 1864, but income from Harriet's books afforded them a comfortable life of retirement, traveling twice to Europe and living in Hartford, Connecticut, and Mandarin, Florida, where they purchased a winter home.

Stowe, Harriet Beecher (1811–1896) American teacher, social reformer and author of what was perhaps the most politically explosive and influential novel in American history. Described during the CIVIL WAR by President Abraham Lincoln as "the little book that made this big war," *Uncle Tom's Cabin, or Life Among the Lowly* (1852) proved to be among the important educative instruments of the mid-19th century. At a time when few Americans attended school, periodicals were the primary source of knowledge, and *Uncle Tom* first appeared in serialized form during 1851 and 1852 in the *National Era*. In it, Stowe described the trials, suffering and human dignity of Uncle Tom, an old black slave who dies after a beating by a transplanted Yankee plantation owner, Simon Legree. The story forced the world to examine the horrors of slavery—an institution that many of the most dedicated humanitarians had chosen to ignore until then.



Harriet Beecher Stowe (Library of Congress)

In March 1852, the Boston publisher Jewett & Company published a two-volume edition. Within eight weeks, 50,000 copies were sold, an experience “without precedent in the history of this country,” according to *Norton’s Literary Gazette*. Sales reached 120,000 in the Western Hemisphere by the end of the year and 180,000 (19 editions) in England. By the end of the year, it had been translated into 20 European languages; by the end of the following year, sales in the United States had reached 300,000—one copy for every 80 people in a nation with only 26 million. By the end of 1853, more copies of *Uncle Tom* had been sold than any other book in American history, save the Bible. No book other than

the Bible had ever carried a message to as many people. Stage plays and children’s books carried the story to every American of every age in every part of the country. In terms of its educative value, it explained slavery to all and solidified both North and South in their positions on slavery. Stowe said she believed her book converted many to abolitionism and inspired self-confidence, self-respect and hope among free blacks.

Born in Litchfield, Connecticut, Stowe was one of eight children of the firebrand Calvinist preacher Lyman Beecher, who sired one of the most influential American families of the 19th century. Educated by her older sister, the great American educator CATHERINE BEECHER, Harriet taught at her sister’s pioneering school for women in Hartford and remained an advocate of equal educational rights for women throughout her life. She joined her father and sister in moving to Cincinnati in 1832, where her father founded and headed the Lane Theological Seminary and her sister founded the Western Female Institute. Once again, Harriet served as a key instructor in her sister’s school.

In 1836, she married Calvin E. Stowe, a minister/professor at Lane, and she began supplementing their meager income from teaching by writing stories and sketches for magazines. She published a collection of these in book form as *The Mayflower* in 1843. The Stoves moved to Maine in 1850, where her husband became a professor at Bowdoin, and she determined to join the cause of abolitionism and began work on *Uncle Tom*. It helped her launch a literary career that would take her to Europe several times and allow her and her husband to live the rest of their lives in comfort. They owned a summer home in Hartford, then a New England cultural and literary center, and a winter home in Mandarin, Florida. Throughout the 1850s and 1860s, she wrote dozens of stories for various periodicals and four more books and novels, including *A Key to Uncle*

Tom's Cabin, a compilation of documentary evidence supporting disputed details in *Uncle Tom*, and *Dred: A Tale of the Great Dismal Swamp* (1856), another antislavery novel. In 1869, she and her sister Catherine tried, without success, to revive the Hartford Female Seminary, which Catherine had founded and where Harriet had been educated. With her sister, she coauthored *The American Woman's Home*, the most influential 19th-century book for mothers, detailing all aspects of housekeeping, family health and child care. A leading author and lecturer for the rest of her life, Stowe was elected to the Hall of Fame for Great Americans in 1910.

Strang, Ruth May (1895–1971) American educator and pioneer in the development of student counseling. A prolific author of texts for other educators, the New York-born Strang studied at Teachers College, Columbia University, where she earned her bachelor's degree in home economics and, later, her master's and Ph.D. degrees. She taught home economics in New York City schools until she joined the faculty at Teachers College in 1929, where she remained until her retirement in 1960. While there, she gained national renown for her research in the area of guidance and student counseling services. In addition to technical advances in the field, she was responsible for extending to teachers the counseling and guidance function that had hitherto been limited to specialists. Among her landmark books were *An Introduction to Child Study* (1930), *The Role of the Teacher in Personnel Work* (1932), *Personal Development and Guidance in College and Secondary Schools* (1934), *Behavior and Background of Students in College and Secondary Schools* (1937), *Counseling Techniques in Colleges and Secondary Schools* (1937), *Educational Guidance: Its Principles and Practice* (1947); *An Introduction to Child Study* (1951), *The Role of Teachers in Personnel Work* (1953) and *The Adolescent Views Himself* (1957).

Strayer, George D. (1876–1962) Pennsylvania-born professor of education who developed the basic standards for educational administration in use today. A graduate of Columbia University, he taught at Teachers College, Columbia University from 1905 to 1943. Originally interested in mathematics teaching, he drifted into educational administration and eventually conducted more than 80 surveys to assess administrative efficiency of schools, concentrating especially on cost management. Author of more than 100 articles on school management, his books on education include *The Classroom Teacher* (1920) and *School Building Problems* (1927).

street academies Privately operated secondary schools for high school dropouts, established during the 1960s in disadvantaged areas of major cities such as New York, Chicago and Los Angeles. Forerunners of public, alternative schools, street academies were usually financed by philanthropic groups that set up classroom facilities in vacant stores or warehouses. Designed as college preparatory schools, many street academies operated on the theory that high, inner-city dropout rates at public high schools related to institutional rather than student failure and that most dropouts had quit school because of the lack of intellectual challenge. Street academies not only provided students with challenging academic activities and curricula but also offered individual counseling and guidance that helped as many as 85% of their students graduate and enroll in college. College completion rates, however, proved low, and many of the street academies began losing their private financial support by the mid-1970s. At that time, however, most public school systems were already establishing alternative schools with similar programs that gradually absorbed most of the street academy student population.

strephosymbolia A perceptual disorder whereby the individual is unable to distinguish between various letters and symbols, seeing *b*, for example, as *d*, *p* or *g*. The term means twisted symbols and was coined in 1925 by psychiatrist SAMUEL ORTON, who was first to identify strephosymbolia, or DYSLEXIA, as it was later called, as a learning disability possibly related to brain damage.

Strivers A controversial method of identifying college-bound minority students with otherwise promising characteristics but low scores on standardized college admissions examinations. Developed by the EDUCATIONAL TESTING SERVICE, which administers the COLLEGE BOARD'S standard college admissions examinations—the SCHOLASTIC ASSESSMENT TESTS—the Strivers program uses a host of personal, family and school characteristics to develop a score which, when combined with actual SAT scores, will close the persistent racial gap in test scores between whites and nonwhites. The Strivers program is seen as a way of equalizing college admissions opportunities for minority students without violating civil-rights and antibias laws and various court decisions that have done away with racial preferences and affirmative action. Despite efforts by educators to close the gap in test scores between whites and both blacks and Hispanics, it has remained stubbornly wide for three decades, with black college applicants scoring 18.5% lower than whites in the verbal SATs and 19.6% lower in math, while Hispanics score about 12% lower on both the verbal SATs and mathematics portion of the SATs.

(See also AFRICAN AMERICANS; BIAL-DALE COLLEGE ADAPTABILITY INDEX; MINORITY EDUCATION.)

Strong, Josiah (1847–1916) American religious leader who tried to unite American Protestant churches in a crusade to Christianize the United States, using education and the

nation's schools as primary vehicles. Strong was born in Illinois, educated at Western Reserve College in Ohio and ordained after studying at Lane Theological Seminary in Cincinnati. Although Strong was a successful minister, he did not leap into the national spotlight until 1885, when he published his book *My Country*, which called for Christian action to solve the nation's burgeoning social problems. Warning that the immigrant tide from central and southern Europe—and the Mormon and Roman Catholic Churches—were imperiling the nation's future, he called on Anglo-Saxon Christians to begin a massive conversion of America to create "the largest liberty, the purest Christianity, the highest civilization." His goal was nothing less than the establishment of the Kingdom of God in the United States, and his instrument, he said, would be education.

In 1886, the Evangelical Alliance for the United States named him general secretary, a position that elevated him to international prominence. In 1893, he published a second book, *The New Era*, in which he expounded a new philosophy that he called Christian Socialism, a doctrine that called on Christians everywhere to engage in conversion-oriented social work among immigrants in city slums and among the unchurched. However, his program of collaboration between, and eventual unification of, Protestant churches began angering leaders of various conservative Christian sects, and he was forced to resign from the alliance in 1898. He formed a new organization, the League for Social Service, which in 1902 became the American Institute for Social Service and published his pamphlets and books and sponsored his lecture tours in the United States and abroad. His efforts to build the Sunday school movement and extend Christian teachings in public education peaked on the eve of American entry into World War I. His death in 1916, however, left Christian Socialism leaderless, and the mass disillusionment that followed the

end of World War I essentially ended efforts to Christianize American schools—in all areas but the American South.

(See also SUNDAY SCHOOLS.)

Strong-Campbell Interest Inventory (formerly, Strong Vocational Interest Blank)

A paper-and-pencil test that attempts to measure occupational aptitudes by exploring the test-taker's general interests and comparing them with the interests of people in 124 various occupations. On the theory that people with common interests choose the same occupations, the test asks more than 300 questions relating to the test-taker's interests in seven broad areas: occupations, school subjects, activities, amusement, types of people, preferences on a list of paired items and self-evaluative characteristics.

structured overview A formal, graphically displayed outline of key words and concepts and their interrelationships in a course, textbook, classroom lesson or textbook chapter. A valuable form of ADVANCE ORGANIZER, the structured overview not only gives the student a visible outline of the material to be covered and a guide for study and note taking, it also serves to hold the instructor accountable for covering specific materials. Usually represented graphically in pyramidal form, the structured overview has a single keyword for the major concept in the uppermost pyramid block. The top block, in turn, sits atop a tier of two or three blocks, each of which contains a keyword for a main idea supporting the main concept. Beneath each main idea are blocks containing keywords for supporting concepts, etc.

Structure of Intellect (SOI) A complex of 90 different thinking skills that together make up a person's intellect and intelligence. Largely used to design an individualized curriculum for a gifted student, SOI attempts to measure

the quality and degree of such intellectual skills as creativity, thinking and reasoning skills, higher-order thinking, and mathematical skills.

student aid Funds—usually in the form of gifts, loans or barter—from nonfamily sources to help students pay for their college and graduate school education. More than 46% of the more than 17 million college undergraduates in the United States receive in excess of \$120 billion in financial aid each year; the federal government provides about \$81.5 billion, or two-thirds of the total, in the form of grants, loans and tax credits. Federal grants total about \$17.2 billion, or 14%, of total aid; federal loans account for \$55.6 billion, or 45%; and tax credits of about \$6.3 billion—in effect, outright grants—amount to about \$6.3 billion, or about 5.2% of total student aid. Federal work-study programs—bartering student labor for free tuition—account for less than 1% of total annual aid (about \$1 billion). College and university scholarships and grants from other institutions provide \$23.3 billion a year to college undergraduates—about 19% of total aid and the largest percentage of aid after the federal government. State governments, in contrast, account for a mere 4.9% of total aid (\$6 billion), although the figure is misleading because of the low tuition that state universities charge state residents, about 60% to 85% below the charge to out-of-state residents. Non-federal loans provide \$10.6 billion in additional funds, or 8.7% of total aid.

(See also FINANCIAL AID; STUDENT LOANS.)

student behavior In education, the social and emotional response and interaction of students with other students and with teachers and administrators in the school situation. Student behavior may be guided and controlled indirectly and directly. Indirectly, schools and teachers attempt to affect behavior by distributing booklets to parents and students, outlining

school rules and regulations. Direct controls come from both students and from teachers and administrators, through expressions of behavioral expectations and remonstrances or punishment in response to inappropriate or unacceptable behavior.

Almost all children misbehave periodically. Continuing, chronic misbehavior, however, may be a signal of socio-emotional disability—sometimes the result of undetected physical or learning disabilities that can be treated with special education or medications. School misbehavior may also result from the application of widely divergent standards at home and at school or from a wide difference between an individual's particular level of development and that of his or her classmates. Whatever the cause, socio-emotional disabilities usually evoke disruptive behavior in class and hostile relations with and alienation from both students and teachers. In 1999, schools across the nation experienced a spate of mass shootings, beginning on April 20, with the murder of 12 students and a teacher at Columbine High School in Littleton, Colorado, by two students who then killed themselves. A month later, a 15-year-old gunman wounded six students at a high school in Conyers, Georgia. In December, a Fort Gibson, Oklahoma, middle school student opened fire with a semi-automatic handgun and wounded five students, and in March 2001, two students at Santana High School, Santee, California, shot and killed two students and wounded 13 others. The series of killings had at least one positive effect on America's school children—namely to break the pervasive code of silence against reporting fellow students to school authorities for rule violations. After the Santee killings, tips by students led to arrests in five California schools of students planning violent attacks on classmates or teachers.

Most school districts have a wide range of special programs for the socio-emotionally dis-

abled, all of which begin with evaluation of the student and determination of the cause of the disability. Although above-normal and below-normal intelligence may be one cause of the student's behavior, most socio-emotionally disabled students are of normal intelligence. Often individual attention in small classes is enough to correct such behavior. Other students may require individual tutoring or remediation. A shift into vocational education often proves effective with some high school students unable to cope with traditional academic programs.

Depending on the size of the school district, a school may transfer socio-disabled students into alternative classes or schools, euphemistically called "opportunity classes." Although ostensibly temporary, such classes seldom see students return to regular school programs. Although such programs do help some students, they can exacerbate student behavioral disabilities because of the perception by both students and teachers that they represent a form of punishment. Dropout rates at alternative high schools are staggeringly high—often above 50% at some schools, although national statistics are not compiled.

student council A group of students, usually in secondary schools, elected by the student body to serve as a form of representative self-government. Once ubiquitous at four-year colleges as well as high schools, student councils began disappearing after the age of majority was lowered from 21 to 18 in 1971, encouraging students to consider issues larger than those within the walls of a school. Student councils on most college campuses now restrict their activities to coordination of social and extracurricular activities.

At the high school level, council activities are often far more encompassing and can represent valuable leadership training when properly supervised by school faculty and administration. Depending on the school, the student

council may fulfill any or all of the following functions: instruction of students in self-government; student discipline, through a student court that hears student violations of school rules and metes out appropriate punishment; dissemination of school news to students; coordination of student relations with the faculty and administration; participation in school administration; development of community service programs and development and involvement in activities of benefit to the school, to the faculty and administration, to parents and to the students themselves (career-day and college-fair programs, homecoming programs, school clean-up and improvement programs and so on).

The council's reach is determined solely by the school board and the chief school administrator, or principal, and its makeup varies from school to school. Some councils consist of an elected representative from each home room; others are made up of the chief officer or officers of each class; and still others may be elected by the entire student body from a list of individual candidates or candidate slates. The council president and other officers may be elected by council members, by the general student body or automatically named on the basis of membership in the senior class. Almost all councils have a permanent faculty advisor, either appointed by the school's chief administrator or elected by council members or the student body.

student descriptive form A standardized form published by the National Association of Secondary School Principals for teachers to use in evaluating each of their students on a variety of factors, including class participation, discussion skills, questioning skills, depth of understanding, independent study, responsibility and consideration of others.

student descriptive questionnaire An optional form for students taking the College

Board Scholastic Assessment Tests. The questionnaire asks students for a variety of personal and demographic information to help colleges recruit applicants they consider good "fits" for their institutions. The questionnaires are never used for screening purposes and do not affect student applications. The questions asked concern ethnic identity, type of high school curriculum, size of high school, class rank, educational and career goals, housing preferences, financial or other aid that might be needed and academic and extracurricular interests. Students whose profiles match the typical student profile of any given college are automatically contacted by that college and invited to consider visiting and applying.

student evaluation The determination of what a student has learned, is now learning and most likely will be able to learn in the future. There are three types of evaluation: criterion-referenced, norm-referenced and student-referenced. Criterion-referenced evaluations compare a student's knowledge to school expectations; norm-referenced evaluations compare individual student knowledge to that of other students; and student-referenced evaluations compare a student's knowledge after a period of instruction to his or her knowledge at the beginning of that period.

Determination of a student's accumulated knowledge is relatively simple, either with teacher-led evaluations or standardized tests. Teacher-led evaluations may be criterion-, norm- and child-referenced. These evaluations include a combination of homework assignments, oral recitations in class and a variety of written tests, some requiring thoughtful essays and others requiring short answers to objective questions. Standardized subject-based tests such as the College Board Scholastic Assessment Tests II and American College Testing Program examinations are both criterion- and norm-referenced, but seldom student-referenced.

Determinations of what a student is currently learning and his or her rate of progress are more complex. Tests that measure student rates of learning may be criterion- or norm-based. Thus, teacher-made tests reflecting the actual curriculum can provide a comparison of one student's progress with others in the same class. If, however, the curriculum is particularly undemanding, the results of such tests may be meaningless in terms of absolute rates of progress. Students might well be learning little and still obtain high test scores.

Standardized norm-referenced tests, on the other hand, offer a comparison of each student's progress with a national or statewide sampling of comparable students, but such comparisons may reflect teacher competence and the level of the school curriculum as well as the student's actual rate of progress. As a result, most American schools now rely on so-called BASIC SKILLS tests, which are standardized tests such as the CALIFORNIA ACHIEVEMENT TEST, the IOWA TESTS OF BASIC SKILLS, and the COMPREHENSIVE TESTS OF BASIC SKILLS. When compared with results from teacher-led evaluations, such skills tests quickly detect whether student performance at any given school or class is a reflection of teacher or school competence, as well as student progress. If, for example, teacher-led evaluations show students from a particular class performing at the upper end of the academic range, while standardized tests show them performing at the lower end, the results may well reflect teacher incompetence and render student academic progress suspect. Unfortunately, many students can be taught to achieve above-average results on standardized tests without acquiring the knowledge their scores would seem to reflect. Indeed, critics of basic skills testing maintain that many teachers spend an excessive amount of classroom time "TEACHING THE TEST" while failing to teach students higher-order reasoning skills. Another criticism of standardized tests centers on the

significantly lower scores obtained by poor and minority students—an indication to critics that test questions may be biased in some way or that schools in poor and minority areas are failing their students.

Determination of prospects for future student achievement, the third goal of student evaluation, is usually based on so-called readiness, proficiency or competency tests. Used to determine whether to promote a student to the next grade (or admit the student to college or graduate school), such tests are both criterion- and norm-referenced in that they demand that the student display a minimum body of knowledge considered essential for successful progress in the year ahead. At the same time, they measure student proficiency in certain areas, such as reading comprehension, writing and computation, and compare those skill levels with a national norm for students completing the same grade. Again, such tests are a constant target of criticism, especially because of the tendency of many schools to use them as a basis for rigid promotion policies that can see students promoted or held back, with only one point separating their scores. Because of different rates of development, many slower students who remain with their peers eventually catch up—often during the following year in the case of elementary school students. In contrast, studies show that students who are held back in the elementary years have above-average dropout rates in high school. As in the case of achievement tests, another criticism of competency tests is their disproportionately high tendency to retain poor and minority students—a factor that may contribute to the disproportionately high, school dropout rates for such students.

student government Any school-sanctioned program that extends to students the opportunity to control some aspect of their lives at school. An effective method of instruction in self-government and leadership, student

government programs may range from a program of electing class officers to a schoolwide system, with student-body officers or a STUDENT COUNCIL elected by the entire student body. Student government not only teaches students the mechanics of democratic self-government, it also allows them to take responsibility for various aspects of their own learning. Student government may have partial or total control over student discipline, through a student court that hears student violations of school rules and metes out appropriate punishment. Student government can also serve as a liaison with the faculty and administration, disseminating school news to students and transmitting student views to the faculty and administration. Student government often serves as a faculty and administration advisory group on student relations. Student government may also be involved in developing a variety of activities that benefit students and the school, such as career-day and college-fair programs, homecoming programs school clean-up and improvement programs, and community service. The extent of student government authority is determined solely by the school board and the chief school administrator, or principal, and varies from grade to grade and from school to school.

student jobs See CHILD LABOR; WORK STUDY.

Student Loan Marketing Association ("Sallie Mae") A federally chartered corporation, created in 1972 to provide liquidity to financial and educational institutions that originate federally guaranteed STUDENT LOANS for college and graduate school. In 2004, Sallie Mae converted into a private corporation, SLM Corp., expanding its operations into consumer loans and fee-for-service businesses. Although student loans no longer constitute its sole business, they provide 60% of revenues and make the company the nation's largest student loan

company, with about \$100 billion in such loans. In effect, "Sallie Mae," as the company is called colloquially, is an investment bank. It buys student loans floated by commercial banks, colleges and the U.S. government and, in turn, sells bond issues to the general public. Thus, Sallie Mae serves as a middleman, borrowing funds from the public to provide banks, colleges and the government with money to lend to students to pay for their college and graduate school education.

student loans In education, a term usually referring to any of a variety of loans to help pay the costs of higher education for students enrolled on at least a half-time basis. Student loans are available as direct and indirect loans. Direct loans are issued by the federal government through any of about 500 participating colleges; direct loans are also available from state governments and as ordinary personal loans from banks and other commercial and private sources, including some colleges and universities. Indirect loans, whose principal and interest are guaranteed by the federal government, are available from commercial banks at relatively low interest rates. In the 2003–04 academic year, nearly 29% of the 16.4 million students attending colleges and graduate schools borrowed nearly \$66.8 billion, or an average of more than \$4,075 per student. The federal government accounted for more than 90% of direct and indirect student loans from the federal government, with 6% coming from state governments and the remainder from the private sector. Cumulative defaults on government-originated student loans over the nearly 40 years of such programs approached \$30 billion by 2000, although stricter oversight by the Department of Education had cut the default rate to 6.9% by the end of 1998, from a peak of 22.4% in 1990.

The federal student loan program originated as a modest plan for needy students in 1963. An element of the PERKINS VOCATIONAL

EDUCATION ACT OF 1963, it provided about \$16 million in loans to students from families below a certain income level, with two-thirds of the loans provided by the government and one-third by participating institutions of higher education. Students were forgiven all principal and interest payments until nine months after completion of their higher education, and interest rates were fixed at 5%. Repayment of Perkins loans was deferred for up to three years after graduation if students enrolled in graduate schools or were unable to find employment. Loans were entirely forgiven if, after graduation, students obtained full-time employment as teachers in public schools serving low-income students or if they became special education teachers, nurses, medical technicians, law-enforcement or corrections officers, staff members in Head Start programs, workers in public or nonprofit child-service or family service agencies or became teachers of math, science, foreign languages or bilingual education. By 1998, the Department of Education disbursed more than \$1 billion in Perkins Loans, with needy students eligible to borrow up to a maximum total of \$20,000 to pay for their undergraduate education and an additional \$20,000 for their graduate education.

In 1965, Congress passed and President Lyndon Johnson signed the Guaranteed Student Loan Act, in response to demands from middle-class families for relief from the rising costs of higher education. Never designed to be the massive program it eventually became, the original loans were limited to a range of about \$250 to \$1,500 a year. The program expanded in 1973, however, and loan limits were adjusted to account for inflation. In 1978 and 1980, it expanded once again, readjusting the maximum lending limits and finally evolving into Federal Stafford Loans. By 1994, loan limits had climbed to \$12,500.

By 1998, loan limits had climbed to \$138,500—\$46,000 for undergraduate educa-

tion and \$82,500 for graduate education but defaults on such loans had mounted to more than \$30 billion, and the government decided to reorganize the Stafford Loan program and add a new direct loan program to the traditional program of indirect loans. The indirect loan program had allowed students and their families to borrow at low interest rates from commercial banks, with both principal and interest guaranteed by the federal government. However, because of the subsidies the government paid to the banks and the high rate of defaults, each dollar loaned cost the government 14 cents. In contrast, direct loans issued by the U.S. Department of Education directly to students and their parents through about 500 participating colleges actually earned the government four cents for every dollar loaned and paid for the costs of operating the entire direct loan program. To further cut government costs, the Department of Education divided both direct and indirect loans into subsidized and unsubsidized loans, with all students, regardless of family income levels, eligible for unsubsidized loans requiring monthly payment of interest at the time the loan is issued, and only the neediest students eligible for subsidized loans, whereby interest payments were postponed until the student finished college and graduate school studies. Of nearly \$42 billion worth of Stafford Loans in 1998, about \$15 billion were subsidized loans and the rest unsubsidized. By 1998, reforms in the loan program, coupled with stricter oversight by the Department of Education, had cut the rate of defaults on student loans to 6.9%, from a peak of 22.4% in 1990. Some heavily endowed colleges and universities are also attempting to cut the default rate by income from their endowments to replace student loans with outright grants. Princeton University began the trend in 2001, allowing all its students to graduate debt-free by giving them outright grants for the funds the students might otherwise have borrowed.

In addition to Perkins Loans and Stafford Loans, the federal government lends—again, directly and indirectly—more than \$2 billion to parents under the PLUS program (Parent Loans for Undergraduate Students program) and \$210 million in a variety of other student loans.

Student Nonviolent Coordinating Committee (SNCC) Originally, a group of African-American college students in the South, dedicated to ending racial segregation and obtaining constitutional rights for blacks. Formed in 1960, the first SNCC effort saw four college students enter and sit down at a whites-only lunch counter. Beaten and arrested, they nevertheless triggered a movement that swept the South and eventually led to thousands of black and white college students and adults boarding “freedom rides” on buses to the south. In addition to freedom rides, SNCC also sponsored massive voter-registration efforts and election campaigns for black candidates. In 1964, more than 1,000 SNCC members were arrested, eight were severely beaten and six were killed. Their well-publicized protests—and their sacrifices—provoked passage of the Voting Rights Act of 1965, which outlawed all devices such as literacy tests that white authorities had traditionally used to deprive blacks of the right to vote.

student publications Any of a variety of periodicals, tracts, leaflets or electronic documents published for circulation to students, by students, either independently or under school or college auspices. Publications vary widely, depending on the student age group and level of school. The most common, however, are Internet “publications,” daily, weekly or periodical newspapers; monthly, quarterly, semi-annual or annual literary magazines and student annuals, or yearbooks. The latter are compilations of photographs, individual biographies and future plans of the graduating

senior high school, college or graduate school classes, with summaries of the school’s various activities. Similar in both high school and college, most tend to be owned by the institution, student staffed but with faculty advisors, and funded largely by advertisements and student subscriptions.

Among periodicals, daily print newspapers are usually found only at large universities, although electronic publishing has made small daily publications distributed as e-mail all but a ubiquitous presence on every campus in America—small or large. Regardless of the method of publication and circulation, student newspapers may operate either as independent student enterprises, with total editorial freedom (within the framework of the laws of libel), or as college-owned organizations (often as adjuncts of the journalism department or school), staffed by students operating under faculty guidance.

At the secondary school level, student publications are almost all school-owned, though student-operated under relatively strict faculty guidance. Students have no legal right to editorial freedom, although faculty advisors usually try to help develop such publications as an important conduit for the civil expression of faculty, administration and student views.

At the elementary school level, publications are usually limited to computer-produced compilations of student stories and poetry. Content of secondary school literary magazines is similar, although format and style are more sophisticated, often comparable to commercial magazines. Funded by a combination of school grants and paid advertisements, secondary school literary magazines usually fall under the purview of the English department. College literary magazines, like newspapers, may originate from a variety of sources, including advocacy groups. Most colleges have at least one traditional literary magazine devoted to serious short stories, poetry and essays. Ori-

nally college-owned and under the direction of the English department, some are now independent student enterprises, although no less dedicated to the publishing of serious literature. Such ventures are usually funded by advertisements and student and faculty subscriptions. The advent of desk-top publishing and the Internet, however, has permitted the appearance of a flock of “alternative” quasi-literary publications on virtually every college campus in the United States, with a range of quality stretching from childish absurd and outrageous to highly professional.

student record All data relating to a student’s academic, extracurricular and behavioral performance at school, along with significant information about the student’s development and academic progress, physical and emotional condition, standardized test results, and attendance records. Elements of such data can be found, at various times, in the classroom teacher’s records, but cumulative records are maintained in the school office, the district office or the college registrar’s office.

A cumulative record, however, does not necessarily transfer into a permanent record. Under the Family Educational Rights and Privacy Act of 1974 (popularly known as the Buckley Amendment) parents have the right to examine all school records of their minor children, while students 18 and older have the right to examine their own records. The law gives parents and students of age the right to challenge and demand the removal of any data they can prove inaccurate and to write into the record any extenuating circumstances relating to what they consider an unfair or detrimental evaluation. As a student’s record accumulates through elementary and secondary school and college, materials no longer considered relevant are, in the interests of space, discarded. By the time a student enters the world of work, little is retained other than a transcript of aca-

demically grades and, perhaps, a listing of extracurricular activities and honors.

student rights A far-reaching, albeit vaguely defined term referring to the legal and constitutional freedoms of students. Students’ rights differ sharply depending on their age and the schools they attend. At the college level, they have the same rights as any adults anywhere to go and come at will, dress and groom themselves as they please, speak in any public place and conduct themselves in any way they please, so long as their conduct does not violate local or state laws or disrupt normal college operations.

Although vaguely protected as citizens by the Constitution, minors do not have adult rights in elementary and secondary schools, if those schools have clearly stated policies outlining acceptable and unacceptable student conduct. The key to student rights in an elementary or secondary school seems to lie in a broad area of school or classroom disruption, a phenomenon that cannot always be defined in legal terms. In *TINKER V. DES MOINES INDEPENDENT COMMUNITY SCHOOL DISTRICT*, the U.S. Supreme Court forced the school district to withdraw threats of suspension against students wearing black armbands to protest the Vietnam War. “Students in school as well as out of school,” said the Court, “are ‘persons’ under our Constitution . . . The Constitution does not stop at the schoolhouse door like a puppy waiting for his master.”

The ruling—that school authorities had overreacted to what was essentially a very personal, quiet protest, involving no speeches, proselytizing or any other disruption of school routine—was a limited victory for student-rights advocates. In general the courts have upheld the right of schools to dictate student dress and grooming codes, hair styles and the students with whom they may associate, denying students freedom of expression, freedom of association, freedom of expression and a host

of other rights constitutionally guaranteed to adults. Moreover, state courts have granted elementary and secondary schools increasing discretionary powers to impose and enforce regulations that school authorities deem necessary for maintaining a stable school atmosphere. The courts have insisted, however, that school authorities make rules and regulations clear to all students and parents, in the form of clearly written booklets whose contents are carefully explained to each student and parent to avoid future misunderstanding and possible litigation. Thus, any student violating the school's written dress or grooming code may, in most communities, be sent home and suspended until the student conforms to the school's written rules. Similarly, most school authorities have the right to suspend students guilty of behavior that disrupts normal classroom or school activities.

As for a student's constitutional guarantees as a United States citizen, the courts have ruled that even these may be suspended in appropriate situations, where the welfare of other students is threatened. Indeed, some state courts have ruled that school authorities have the right to search student desks and lockers, which are legally the property of the school, when they suspect the presence of dangerous chemical substances or guns. Some states insist that such searches be conducted only with student permission and with the student and at least one adult witness present. Most states require that schools include in their published school rules their policy with regard to desk and locker searches.

The first, somewhat definitive U.S. Supreme Court decision in which the Court took up the question of searches of a student's person and property came in 1985, in *NEW JERSEY V. T.L.O.* In that case, the Court ruled it legally permissible for public school officials and teachers to search a student's property as long as the scope of the search was proper and there were "reasonable grounds" to believe the search would

yield evidence of a violation of the law or school rules. Although the Court said that students were covered by Fourth Amendment protection against "unreasonable searches and seizures," it also said that school officials could conduct certain types of searches without a warrant as long as they fulfilled two important prerequisites: (1) they based their searches on reasonable grounds of suspicion and (2) the scope of the searches was appropriate to the circumstances.

In the case of "T.L.O." (the initials of a girl whose name was kept confidential), the student was caught smoking in the school bathroom. School officials searched her pocketbook and found drug paraphernalia and evidence of recent drug sales. They called the police, and she was arrested. She challenged her eventual conviction on the grounds that the evidence against her had been seized illegally, but the Court ruled against her. Noting that violent crime and drug use in schools had become "major social problems," the Court declared that "the school setting requires some easing of the restrictions to which searches by public authorities are ordinarily subject." The Court failed, however, to provide specific, in-school, search-and-seizure rules and left most educators unclear about the extent of their authority in this area. "The legality of a search of a student," said the Court, "should depend simply on the reasonableness, under all the circumstances of the search."

In general, after a decades-long experiment in liberalized student rights that led to near anarchy in many schools by the end of the 1970s, many public school authorities determined to restore order and discipline in the 1980s. With the "T.L.O." decision as a guideline and the support of lower courts, they systematically undertook to remove drugs, alcohol and guns from schools. Many schools also required adolescents to dress and groom themselves in conformity with generally accepted adult standards.

Students' Army Training Corps A short-lived program established on October 1, 1918, that drafted students who were potential officers but kept them in college until called for active duty. In addition to their regular college curriculum, however, they were expected to participate fully in standard military training for the Army. The program was designed to increase the pool of potential Army officers, while allowing men's colleges to preserve their enrollments and avoid total shutdowns. Launched amidst a flurry of publicity, the program was quickly dismantled after the Armistice a month later.

Students for a Democratic Society (SDS)

A leading group in many student protests during the 1960s. An outgrowth of the Student League for Industrial Democracy of the mid-1930s, the organization had little impact on the workers' rights movements of that era and lay relatively dormant until 1962, when its members issued their radical platform at Port Huron, Michigan. By 1966, its role in the student Free Speech Movement protests at the University of California, Berkeley, had won it more than 5,500 supporters on about 150 campuses. In April and May 1968, it led the so-called Siege of Morningside Heights, protesting Columbia University plans to build a gymnasium on adjacent city parkland used by nearby black residents. By then, its membership had expanded to more than 35,000 students on 250 college campuses, but its membership varied from marginally sympathetic liberal students to fanatic, dues-paying members. By the end of the decade, as the entire student protest movement began waning, SDS split into three organizations, one of which was the radical Revolutionary Youth Movement, which became better known as the Weathermen. Their name from a Bob Dylan lyric—"You don't need a weatherman to know which way the wind blows,"—the Weather-

men, or Weather Underground, were eventually responsible for a series of arsons, robberies, murders and bombings, some at major universities, before their members were arrested and the organization dissolved.

student-teacher ratio The relationship between the number of students and the number of teachers in an academic setting—that is, a class, school, district and so on. Often called the pupil-teacher ratio, the average ratio was 16.6 elementary and secondary school students for every teacher in the United States in 1998, with the elementary school ratio 18.3:1 and the secondary school ratio 14.0:1. The average ratio for all public schools in the United States was 16.8:1, with a ratio of 18.6:1 in elementary schools and 14.2:1 in secondary schools. The ratio for all private schools was 15.2:1—16.6:1 in private elementary schools and 11.6:1 in private secondary schools. 11.6:1. Often related to student achievement and educational quality, student-teacher ratios determine the individual attention a teacher can provide each student. Student-teacher ratios also reflect the amount of money a state or school district is willing to spend on teacher salaries and on education generally.

student teaching A program akin to an apprenticeship in teaching, during the last year of college-level teacher training. The student teacher is assigned to work with a master teacher in a public or private school classroom, observing the master teacher, providing help and cooperation when required, and eventually designing lesson plans and conducting classes under the supervision of the master teacher. Unpaid and visited regularly by an advisor or supervisor from the college, the student receives full academic course credit for successful completion of student-teaching work, which usually lasts a semester and is required for teacher certification in most states.

student-team learning An approach to learning that groups four or five students, usually quite mixed in ability, gender and ethnicity, into teams to prepare each other academically for a particular learning unit; divided into five distinct phases: the class presentation by the teacher; team study of notes of the teacher's lecture and of appropriate required and recommended readings; cooperative preparation for quizzes, through group discussion of worksheet problems, comparison of solutions and correction of each other's work; calculation of individual improvement scores; and determination of the best performances among the various teams. The students take their quizzes individually, with scores compared to each individual's previous work to determine individual improvement. Individual scores within each team are then averaged to obtain a team score. In addition to enjoying the camaraderie of work, students learn a sense of responsibility to others. Academically, the more gifted students learn through teaching, while serving as role models for the slower students. Moreover, team competition lends excitement to student studies and academics. Careful selection of each team's participants is essential, however, to keep competition relatively even and prevent any single team from consistently dominating and, therefore, discouraging other participants.

student unrest The chronic disruption of regularly scheduled school or college activities by unruly students. Student unrest and activism date to the earliest, medieval universities in Europe, where students were often responsible for hiring and firing their teachers. In the American colonies, student unrest first appeared at Harvard College with bitter debates that began in 1725 over the question, "Is civil government originally founded on the consent of the people?" By 1760, the debate had escalated to "Is an absolute or arbitrary monarchy

contrary to right reason?" and by 1769 it had evolved into the near-treasonous question: "Are the people the sole judges of their rights and liberties?" Students at the College of New Jersey (later, Princeton), the College of Philadelphia (later, University of Pennsylvania) and the College of Rhode Island (later, Brown) joined the spreading student unrest against the English Crown in the 1760s. By 1773, students at Harvard, Yale and the College of New Jersey regularly boycotted tea and burned it, along with British effigies. Students actually seized control of Harvard and Yale in 1776 and 1777 (and did battle with British troops), until those institutions named pro-independence presidents to restore calm.

Although the Civil War disrupted student life at both northern and southern colleges, the disruptions were not the result of student unrest per se. In the North, student abolitionists simply left school and marched to war, while students in southern schools joined regiments to protect their native soil. When the war ended, most southern schools and colleges had been destroyed.

The turn of the century saw some socialist activism at American universities, and World War I prompted minor student unrest at a handful of colleges. But student life remained relatively calm in the United States until 1960, when four black college students in Greensboro, North Carolina, sat down to be served at a variety store luncheon counter reserved for whites. After the four were beaten and arrested, other young blacks in the South began staging comparable sit-ins in restaurants and lunch counters. Within a year, they were joined by white and black college students from the North and West, who staged massive "freedom rides" to challenge racial segregation on interstate buses, trains and public facilities throughout the South.

The worldwide television publicity of the subsequent outrages suffered by student free-

dom riders at the hands of local police and white mobs succeeded in shaming federal government agencies into enforcing desegregation laws dealing with interstate transportation and federally regulated facilities. Amazed by their strength and effectiveness in provoking social change, myriad campus groups, formed originally as temporary ad hoc groups to fight racial segregation in the South, evolved into permanent student organizations determined to combat whatever they perceived as injustice. In so doing, they began a 30-year era of student unrest unparalleled in the history of American education. Student protests ran the gamut from reasoned discussion to class boycotts to campus shutdowns, sometimes lasting for weeks, and even to the bombing of university buildings. In the two years beginning in May 1967 alone, there were 25 bombings, 46 cases of arson, 207 buildings occupied and more than 6,000 arrests on American college campuses. Few campuses were exempt, and none remained unchanged.

Some of the campus activist organizations merged to form national organizations such as the STUDENT NONVIOLENT COORDINATING COMMITTEE (SNCC) and the STUDENTS FOR A DEMOCRATIC SOCIETY (SDS), with SNCC a major force in recruiting college students for freedom rides in the south. Both SNCC and the Students for a Democratic Society also engineered demonstrations on many northern campuses, demanding that colleges end racially discriminatory admission policies. Of little import initially, the campus demonstrations gained worldwide attention after activists at the University of California at Berkeley demanded the right to use a public area of the campus to recruit students for freedom rides and off-campus demonstrations. University authorities had first refused, then relented, and then modified their stand, banning only recruitment for illegal causes. When student demonstrators were arrested for staging a civil rights demonstration at a local hotel, the demonstration spilled over onto the campus, where stu-

dents melded the idea of civil rights for black people to civil rights for young people.

In effect, they demanded a greater share in university decisions and an end to the traditional university doctrine of *in loco parentis*, with university authorities acting in place of parents as legal guardians of students, with full authority to govern their lives. The age of majority at the time was 21, and most undergraduates were minors. In December 1964, thousands of students occupied Sproul Hall, the campus administration building. Eventually ejected by police, who arrested 800, the Berkeley students forced the university to accede to their demands, provoking similar demonstrations on other major college campuses across the United States.

The passage of the CIVIL RIGHTS ACT OF 1964 outlawed all forms of racial segregation in public facilities, thus opening all college doors to blacks and eliminating one cause of the continuing student protests. But the war in Vietnam was escalating and provoking anger and distress among Americans of draft age. Because all students were eligible for a temporary injunction from compulsory military service to complete their higher education, college enrollments spiraled. Many blacks, however, were unable to afford college, and inordinately high numbers of them were drafted for service in Vietnam. The Rev. Martin Luther King, Jr., began leading protests against the war and the inequities of military conscription. King's assassination on April 4, 1968, triggered a wave of riots that left whole areas of New York, Washington and other major cities aflame for days. The riots spilled over onto some campuses, where blacks demanded that white institutions do more for the black community.

In 1968, black students supported by members of the Students for a Democratic Society seized five Columbia University buildings to block construction of a new \$10 million gymnasium on parkland leased from the

city and normally used by children in the adjacent black slum. In California the same year, black college students at San Francisco State College rioted after their demands for admission of more blacks and the introduction of more courses on black history were rebuffed. Intermittent strikes and rioting led to 453 arrests in January 1969. In December 1968, armed black students seized an administration building at Cornell University. In all the demonstrations, blacks were initially supported only by radical white students and faculty members, but the eventual use of armed police to end the demonstrations ultimately radicalized large segments of moderate students.

When President Richard M. Nixon expanded the Vietnam fighting in 1969—after winning election on a campaign to end the war—radicalized American college students had a new cause around which to rally. Nixon incensed them even more by charging that “anarchy” was stalking American campuses. In the spring of 1969, Harvard student protesters shut down the undergraduate campus for the entire spring term. Like students at other campuses, they were protesting the questionable constitutional legitimacy of the Vietnam War and Harvard’s sponsorship of the RESERVE OFFICERS TRAINING CORPS on campus to train future officers for the military.

The protests at Harvard and elsewhere resumed in even greater intensity in the fall of 1969. They reached a peak early the following May, after President Nixon revealed that he had ordered U.S. troops in Vietnam to invade Cambodia. On May 2, militants at Kent State University in Ohio burned down the ROTC building. At the request of Kent’s mayor, Ohio Governor James Rhodes transferred exhausted National Guard troops from riot duty in the Cleveland-Akron area, with orders to break up all student demonstrations. On May 4, the troops ordered a group of student war protesters to disperse. The students began taunting the

troops and hurling rocks at them, and the troops began firing, hitting 13 protesters, four of them fatally.

The killings set off a nationwide debate over the rights of the young. Some political leaders pointed out that American society had imposed the harshest obligations of citizenship on the young without giving them commensurate representation in the decision-making process. It was a plaint that had sparked the Revolutionary War, and by 1970 there were too many intelligent, young, college-educated Americans—both black and white—who were witnessing or suffering iniquities they had been taught by their elders did not exist. They had seen years of television news film documenting the brutal treatment of blacks in the South. Additional materials appeared about the deprivations of Mexicans, Puerto Ricans, American Indians, Asians and other minority groups. And by 1970, they had seen a decade of devastating coverage of cruelties in Vietnam: an hysterical little girl running naked, her body aflame in napalm; a police chief summarily shooting a suspected enemy soldier in the head and the remnants of a massacre by U.S. soldiers of an estimated 109 to 567 unarmed men, women and children in My Lai. And in Kent, Ohio, 13 young Americans had been shot by American troops because they—along with the majority of Americans—wanted their government to abandon the war to which they, the young, would be sent to die.

Agreeing that Americans who are old enough to be drafted are also old enough to vote, Congress and the state legislatures overwhelmingly approved passage of the Twenty-sixth Amendment to the Constitution the following year. The amendment lowered the voting age (and age of majority) from 21 to 18, the age at which Americans reached draft status. Two years later, American military involvement in Vietnam came to an end, as did the draft. Although student unrest subsided, activist campus organizations remained in place on

many campuses and continued to serve as vehicles for a wide variety of protests. Starting in the late 1970s, students at many private colleges protested against South African apartheid and demanded that their colleges cease investing funds in companies that profited from trade with or operations in South Africa. At a parochial level, demonstrators on some campuses demanded, variously, more black-studies courses, more women's-studies courses, fewer or no core curriculum requirements, the right of students to opt for pass-fail grading, lower tuition, gay and lesbian rights and numerous other student rights.

The endless protests contributed to many permanent changes in higher education in the United States. The protests (along with the Twenty-sixth Amendment) ended the centuries-old doctrine of *in loco parentis* at college campuses. Students, not parents, became entirely responsible for their financial, academic, social and legal obligations on almost all college campuses. Colleges can no longer legally send grade reports or have any other direct formal relationship with parents without student consent. Campus rules governing personal conduct are generally limited to the usual community ordinances and laws governing vandalism, assault and underage consumption of alcoholic beverages. In the area of academics, few colleges require students to take any specific courses to qualify for graduation, although all require a specific number of total courses, with the choice left to students. Most colleges permit enormous flexibility in the choice of majors, allowing students to combine two or more majors into interdepartmental programs if each department chair approves.

Student Volunteer Movement for Foreign Missions (SVM) A massive evangelistic effort involving more than 8,000 American college students, who served as volunteer missionaries to Christianize and Americanize India,

the Middle East, Southeast Asia, China, Japan, Africa and Latin America. Founded in 1888, SVM was an outgrowth of fundamentalist preacher DWIGHT L. MOODY's conferences in Northfield, Vermont, where he called on young Americans to pledge themselves to the "evangelization of the world in this generation." With an executive committee drawn from the Moody-influenced YOUNG MEN'S CHRISTIAN ASSOCIATION and YOUNG WOMEN'S CHRISTIAN ASSOCIATION organizations, SVM was placed under the leadership of John R. Mott, the student head of the Cornell University YMCA. Mott became the founding chairman of SVM in 1888. In 1900, he wrote the widely circulated *The Evangelization of the World in This Generation*, and by 1910 he succeeded in organizing 2,000 SVM on-campus and off-campus study groups, with a total enrollment of 25,000 students.

Obsessed with Christianizing China, he wrote in 1911, "It is Western education that the Chinese are clamoring for, and will have. If the Church can give it to them, plus Christianity, they will take it; otherwise they will get it elsewhere, without Christianity—and that speedily." His appeal sent American student missionaries swarming across China, and by 1925 SVM had founded several hundred primary schools and about 90 secondary schools—boarding schools, high schools and seminaries—plus about 100 theological schools, medical schools and nursing schools. The colleges, which included Yale in China, had a total enrollment of 3,500 students, the secondary schools about 26,000 students and the primary schools about 250,000 students. All were American-style schools, teaching the English language, English literature, Western history, American science and mathematics and, of course, biblical and Christian theology.

Most SVM missionaries were from church-going Presbyterian, Methodist, Congregationalist and Baptist families and had attended denominational and theological colleges. A disproportionate number came from Denison

and Yale Colleges, among men's schools; Mount Holyoke and Rockford, among women's colleges, and Oberlin and Grinnell, among coeducational schools. Together, they surrendered their material ambitions and dedicated their lives to God's service. For whatever reasons, they believed that the spiritual needs of the non-Christian masses abroad—in China, India, Africa and elsewhere—presented a more urgent task in the eventual establishment of the Kingdom of God than the plight of millions of American poor.

Once abroad, they did more than attempt to Christianize the world through Bible instruction and preachments. Aside from ministers, there were physicians and nurses, who taught cleanliness and hygiene and established clinics and hospitals, albeit adorned throughout with Christian symbolism. Agronomists taught scientific farming methods and Western diets, and, in the most primitive areas, missionary wives taught what they believed was the sinfulness of nakedness and the virtue of wearing clothes. Central to these efforts, however, was the establishment of American-style schools that taught literacy and numeracy, as well as Christianity. Unfortunately, graduates of such schools emerged with skills that allowed them to live comfortably within the growing Christian compounds created by SVM, but they were seldom prepared to return to their own societies except as Christian missionaries who often found themselves scorned as traitors to their cultures.

In China and elsewhere, moreover, there were growing nationalistic demands for local control over educational institutions. Meanwhile, a post-World War I mood of disillusionment was sweeping across most U.S. college campuses, dissipating enthusiasm for SVM. Mott, who shared the Nobel Peace Prize in 1946, stepped down as SVM chairman in 1920, and the movement gradually declined in the face of the materialism of the 1920s, the

economic depression of the 1930s and, finally, World War II. SVM nevertheless had an enormous impact on the non-Western world and on American education in the United States. Not only did SVM introduce Eastern, Mideastern and African cultures to American values, the American arts and sciences and American technology, it also created a sizeable force of American intellectuals versed in Asian and African affairs. When they eventually returned to the United States, they became the leading scholars and interpreters—at American colleges and universities, in the diplomatic service, in journalism and in the world of letters—of the lands where they had lived.

study abroad programs Any of a variety of programs for American high school or college students, who take an approved leave to pursue studies in foreign schools or colleges and receive appropriate course credits in their home institutions. Some study abroad programs are arranged by American institutions, some by the student. Some study abroad programs arrange for students to live with host families; others simply arrange for living quarters at the foreign educational institution itself. A handful of study abroad programs involve study at a foreign branch of the American institution. Many American colleges have specific JUNIOR YEAR ABROAD programs as acceptable elements of their four-year program, and a few colleges actually require students to spend one semester studying abroad at allied foreign universities.

Nearly 200,000 Americans study abroad each year—61% of them in Europe, 7% in Asia, 6% in Oceania, 3% in Africa and 2% in the Middle East. About 20% go to study the social sciences and humanities, 18% business, 15% history, 8% foreign languages and another 8% fine or applied arts. Only 6% spend the entire academic year abroad, 38% stay for only one semester, and 46% go for the summer term.

Sixty percent go abroad during either their junior (42%) or senior (18%) years. The students' own colleges and universities sponsor nearly 75% of the programs.

In the 2004–05 academic year, Britain, as always, attracted by far the most American students—more than 32,000. Italy drew under 25,000, Spain nearly 21,000, France more than 15,000, Australia nearly 11,000, Mexico 9,200, Germany 6,500, China 6,400, Ireland 5,000, Costa Rica 4,900 and Japan 4,100. Austria, New Zealand, Czech Republic, Greece, Chile, South Africa and Argentina each attracted between 2,000 and 2,750 American students.

(See also AMERICAN FIELD SERVICE; EXPERIMENT IN INTERNATIONAL LIVING.)

study hall A special classroom, usually in secondary schools, reserved for silent, independent pursuit of study or preparation of written assignments. Never held in libraries, study halls are usually supervised by one or more faculty members, whose primary responsibility is to ensure silence. Unlike resource classrooms, study halls are not designed to provide students who had extra help. Study halls were originally designed to sequester and supervise students who had no regularly scheduled class or activity. Many schools continue to require students whose grade-point averages fall below a certain level to attend study hall during their free periods. Though once a standard part of student schedules at most secondary schools, study halls in many schools have recently given way to specific classroom or resource room assignments, where smaller groups of students can obtain individualized study help or practice computer skills.

study skills A variety of methods students can be taught to facilitate acquisition of knowledge in class and from textbooks. Among the variety of study skills that elementary and secondary

school teachers try to teach their students are listening skills, speed reading, note-taking skills, test-taking skills, use of the library and research skills and adapting the student's environment to facilitate learning (improved lighting, proper room temperature, proper seating and desk space, study regularity, elimination of distractions, etc.). Many elementary, middle and high schools require entering students to take a specific minicourse in study skills at the beginning of each year.

stuttering A speech disability that blocks the smooth transition from one syllable to another, manifesting itself in either abnormally long pauses or oral stoppages, prolongations of the previous sound or repetitions of the same sound. Some speech therapists differentiate among stuttering, stammering and cluttering, with the first referring to speech repetition, the second to speech blockage and the third to garbling of syllables. The causes of each remain undefined and varied, and few therapies have proved universally successful.

Stuttering occurs in about 1% to 3% of pre-adolescent children. Emotions such as fear, embarrassment, hostility and excitement can produce stuttering and stammering in even the most fluent individuals and have usually been cited as a cause of chronic stuttering. Although there is no evidence of any cerebral association, there is some evidence that stuttering may result from some form of neurological disorder "downstream" from the brain. For example, stutterers do not usually stutter when talking to themselves, their toys or their pets. Thus stuttering may relate to the timing of the muscular mechanisms involved in utterances. Various therapies, such as psychotherapy, drugs, relaxation techniques and breath control, have scored uneven successes.

subject-centered curriculum A rigid curriculum, based on specific courses, which

mandates specific amounts of material to be covered over specific periods of time—regardless of student abilities or interests. Also known as scholiocentric curricula, such subject-centered curricula assign the greatest importance to the subject matter rather than to the students. A student's failure to absorb the required material to an acceptable degree results in his or her retention. Although they were the traditional approach to education for several centuries, subject-centered curricula have gradually been modified and blended with a more child-centered approach to education, particularly when progressive education was introduced in the late 1800s.

Few elementary schools remain subject-centered, forcing their students to concentrate for an extended period on a single subject, before proceeding to the next subject. Younger children simply do not have the attention span to absorb any single body of material—for example, mathematics—beyond a specific amount of time. Indeed, the most academically successful elementary schools tend to present an amorphous, child-centered approach to learning during the elementary years. In such schools, all materials are presented on the basis of student interest and then are used as springboards to learning such traditional subjects as reading, writing, computation, history and science. A class might embark on a cooking project, but, in the course of what might seem like merely an amusing project, they would learn measuring, arithmetic, reading (from recipes), chemistry and perhaps even some social studies, depending on the origin of the recipe.

Secondary school education continues to be relatively subject-centered, especially for college-bound students. Most colleges require their applicants to have studied a core curriculum of English, mathematics, a foreign language, social studies and the sciences to gain admission to the school. The absolute cover-

age of each subject, however, and the specific ways in which it is taught, including textbooks and other materials, are usually flexible enough to adapt to the abilities and interests of students, and it is rare to see graduates of different secondary schools who have studied identical materials in every subject.

(See also EDUCATION.)

subject correlation See CORRELATION, SUBJECT.

subjective testing The nonempirical evaluation and grading of test results on the basis of the marker's judgment of what is acceptable or unacceptable work. Unlike most mathematics tests, where there is an absolute "correct" or "incorrect" answer to each question, essay-style questions in literature or social studies tests often offer opportunities for responses that are poor, good, better or best, and the absolute grades are assigned on the basis of teacher judgment.

substance abuse The ingestion of illegal drugs or a range of pharmaceuticals, alcoholic beverages, inhalants and tobacco, which are legal for adult consumption but are not legally available to minors without the approval of their parents, doctors or other adults authorized to dispense such products. Almost all of these substances fall within a wide range of potentially toxic depressants, stimulants and hallucinogens. The most commonly abused depressants are alcohol, barbiturates, heroin, morphine and tranquilizers. The most commonly abused stimulants are amphetamines, amyl or butyl nitrites ("poppers"), cocaine and ephedra ("ecstasy"). The most common hallucinogens are MDMA (made from a combination of synthetic mescaline and an amphetamine—doubles as a stimulant), D-lysergic acid diethylamide ("LSD" or "acid"), mescaline ("peyote" or "cactus"), PCP, or

phencyclidine (“angel dust”) and marijuana, which often can also have the effect of a depressant.

According to the U.S. Substance Abuse and Mental Health Services Administration, more than 24 million Americans, or almost 8.5% of the American population, use illicit drugs. The percentage climbs to a peak of more than 20% in the 18- to 25-year-old age group, before declining to 10.5% among 26- to 34-year-olds and only 4.6% among Americans 35 years old and over. More than 11.5% of teenagers use drugs regularly; 17.5% consume alcohol, and nearly 11% describe themselves as binge drinkers (consuming five successive alcoholic drinks at a seating). More than 8% of American teens use marijuana and hashish, while 1% use hallucinogens and less than 1% cocaine. About 13% smoke cigarettes and 2% use smokeless tobacco.

substitute teacher A certified teacher who serves as a temporary replacement for a regular member of the faculty. A substitute teacher may replace a teacher for a day or more during a regular teacher’s temporary absence, or he or she might fill in for an entire year, while a regular teacher is on leave. Regardless of the length of service, substitute teachers are required to fulfill all the administrative duties of regular teachers (recording attendance, grading papers, etc.) and to strictly follow the regular teacher’s lesson plan. In addition, substitute teachers are expected to provide a written summary for regular teachers of the day’s activities and to report to the principal at the beginning and end of the day. Substitute teachers may be on permanent assignment to a particular school or serve as “floaters,” reporting to different schools throughout a district as needed.

subvocalization In reading, the movement of lips, the formation of words with the

lips or the whispering of word sounds while trying to read silently. Though normal for young, beginning readers, subvocalization can become an impediment to silent reading at normal rates and can even become a learning disability if it persists beyond a reasonable age, into the upper elementary school years.

suicide Intentional self-inflicted death. A major problem among American adolescents since 1980, suicide remains the third leading cause of death for 15- to 24-year-olds, after accidents (largely motor vehicle accidents) and death by assault (usually firearms). The rate of student suicides reached a peak of 13.3 per 100,000 in 1995, when 4,186 lost their lives. Although the rate declined to 10.2 per 100,000 in 2000 (the same as the rate for all Americans), 3,971 youngsters died.

The suicide rate for children 14 and under is much lower and has remained relatively constant since 1985, fluctuating between 0.6 and 0.9 per 100,000—the latter figure being a peak reached in 1995, when just under 300 children killed themselves. In 2000, when the suicide rate for children under 14 was 0.7 and the fifth leading cause of death, 189 youngsters actually died.

Almost twice as many whites commit suicide as blacks, and the suicide rate for boys is almost five times that of girls. In addition to racial and gender differences, there are startling geographic differences in suicide rates: New Mexico, Montana and Nevada have the highest rates in the nation—19.8, 19.3 and 18.4, respectively—and New York, Massachusetts and the District of Columbia have the lowest rates—6.6, 6.7 and 7.0, respectively. Nationally, suicide was the third leading cause of death for 15-to 24-year-olds, after motor vehicle accidents and death from firearms. During the 1990s, student suicides declined significantly, along with other types

of high-risk adolescent behavior. In 1997, 4,186 Americans ages 15 to 24 committed suicide—a decline of nearly 10% from the 4,650 who took their own lives five years earlier, but nevertheless suicide remained the third leading cause of teenage mortality at a rate of 11 per 100,000. In addition, 307 children 14 and under also committed suicide.

More than two-thirds of all male teenage suicides are committed with firearms, while 52% of female suicides are committed with firearms. About one-fourth of all suicides, male and female, are the result of hanging. Autopsies show that about one-third to one-half of all suicide victims were under the influence of drugs or alcohol before they killed themselves. For every teenager who commits suicide, 100 more—that is, one in 13 teenagers across the nation—try each year. Because so few young suicides undergo psychotherapy, little scientific or epidemiological evidence is available about them. Many psychologists, however, have been able to interview youngsters who have attempted suicide. One such study found that, in contrast to the better than five-to-one ratio of male suicides to female, 90% of all adolescent suicide attempts are by females. The finding can be interpreted in many inconclusive ways. Psychologists list six broad bases for suicide attempts: grief following loss of a love object, whether real or fantasized (such as a famous star whom the near-suicide did not even know); self-punishment; an effort to obtain help from agencies outside the family; retribution against another person; psychotic instability and suicide games, such as Russian roulette, excessive drinking or automobile racing, which are not atypical of high-risk adolescent behavior.

Summerhill A child-centered, private school established in England after World War I as an experimental, nontraditional approach to edu-

cating children with a variety of behavioral or learning disabilities. An outgrowth of the BRITISH INFANT SCHOOL movement, Summerhill School in Leiston, Suffolk, was founded by English educator A. S. Neill (1883–1977), who scorned the widely held religious notion of original sin. Believing that children were born innocent and inherently good, he established Summerhill as an environment where adults lavished students with tenderness and love and imposed a minimum of constraints. The goal was to allow children's innate interests to provide the motivation for learning in an environment designed to cultivate the affective domain, where development of emotions, feelings, beliefs and attitudes had priority over intellectual and physical skills. Although his books *The Problem Child* (1926) and *The Problem Parent* (1931) gained his methods a considerable following in the 1930s, interest waned in the decades that followed. The 1960s, however, saw a revival of interest in progressive and open education, and Summerhill once again gained the attention of American educators, with the publication in 1962 of Neill's book *Summerhill*. Extreme in its reliance on affective development, Neill's ideas and the Summerhill concept nevertheless served as a balance to traditional education based on strict discipline, religion, rote learning and adherence to a rigid curriculum and daily class schedule. Most academically successful schools have blended techniques from both extremes into modern pedagogy.

In 1992, Summerhill was the target of widespread public criticism after a television documentary showed students and teachers swimming naked together. In 1999, the British government threatened to close Summerhill after inspectors from the Office for Standards in Education concluded that the school was "not providing an adequate education for its pupils." Attacking the school's central policy of allowing children to decide whether and what

they wanted to learn, the report charged that the school had “drifted into confusing educational freedom with the negative right not to be taught. As a result, many pupils have been allowed to mistake the pursuit of idleness for the exercise of personal liberty. . . . Whether the pupils make sufficient progress and achieve the standards of which they are capable is left to each child’s inclination. As a result, those willing to work achieve satisfactory or even good standards, while the rest are allowed to drift and fall behind.” School officials defended their methods saying, children were “free to do as [they] like as long as it doesn’t interfere with anyone else’s freedom.” Faced with harsh government sanctions, however, the school pledged to try to motivate laggard students to improve academically.

summer jobs For full-time students, paid employment during school or college summer vacation months. Relatively difficult to obtain, summer jobs for adolescents 16 to 19 years old are seldom available in numbers sufficient to meet the demand—especially given the lack of marketable skills in this age group. For many years, the rate of adolescent unemployment hovered in the 20% to 30% range, until a wave of unprecedented prosperity swept across the nation in the late 1990s, sending overall unemployment rates plunging to a low of 4.3% in 1999. The lure of jobs, however, provoked an invasion of immigrants free of any school or college obligations, able to work full-time, even overtime, and often at less than minimum wage. Their arrival hit high-schoolers especially hard. By 2003, the unemployment rate for all high school and college students enrolled in school rebounded to 9.7%, but the rate for high-school students (16 to 19 years old) had soared to 13.6% while the rate for college students was only 5.3%—often because they brought technological skills to their work and the prospects of continuing in their jobs after

graduation. Of more than 20 million students aged 16 to 24 enrolled in school or college full time in 2003, only about 8.9 million, or about 44%, were actually in the job market, and of those, 56% were high school students and the rest college students.

Unemployment rates vary sharply according to gender, race, socioeconomic status and school location, with unemployment rates among boys about 20% higher than among girls. Unemployment rates among black youngsters are 40% higher than among white students. Unemployment among Hispanic adolescents is about 10% higher than among their white counterparts. Unemployment rates are highest among children of lower economic status, and urban unemployment rates are higher than those for rural students, with suburban areas having the lowest teenage unemployment rates of all. Unemployment figures for adolescents, however, are notoriously unreliable. Not all adolescents who say they are seeking jobs actually do so with anything approaching serious motivation. Many seek no work, and untold thousands unquestionably find odd jobs and even full-time work for cash that goes unreported and leaves them off the government’s official employment rolls. In an effort to ease high unemployment among economically disadvantaged youth, Congress enacted the Comprehensive Employment and Training Act in 1973, which eventually created more than 1 million summer jobs for young people 14 to 21. The program proved too cumbersome to maintain; indeed, the job application process proved so complex that many applicants were not notified of their acceptance for a job until the summer had ended and they had returned to school. Although the median weekly wage for all workers 16 to 24 years old in 2003 was \$695, the figure is all but meaningless for high school and college students. Fewer than 10% of students work a standard 40-hour week. Indeed, more than 53% work fewer than 20

hours a week. Food service jobs offer the most opportunities for high school seniors, absorbing 24% of that workforce, while 14.5% work as grocery clerks or cashiers, 11.8% as sales personnel and 6.9% in office or clerical jobs. Other jobs include lawn work (2.2%), delivery work (1.6%), babysitting and child care (4.3%), camp counselor and lifeguard (0.7%), farm work (2.2%), mechanic (1.4%), beautician (0.2%), house cleaning (0.9%), construction (2.0%), health service (1.6%) and warehouse work (2.1%). Some 23.5% of high school seniors engage in job categories lumped together as "other."

summer school A formal semester of school or college held during the traditional summer vacation months, between the end of the previous school year and the beginning of the next. Once limited to high-school and college students to repeat work they failed during the previous academic year, summer schools saw a vast expansion during the 1990s, reaching out to students as young as kindergarten age, as part of a national movement to raise academic performance of American students and put an end to the practice of SOCIAL PROMOTION on the basis of age rather than achievement. One in five students in the nation's 53 largest urban districts attend summer school, with the percentage reaching as high as 45% in such cities as Chicago, St. Louis and Miami. Summer school allows students to repeat work they either failed or came close to failing during the regular school year, and it may have been responsible for the dramatic decline in so-called social promotions. Such promotions in those same 53 urban districts dropped from 41% in 1998 to 31% in 2001. Summer school is not, however, limited to mandatory courses for failing students. Many students attend summer school voluntarily to take courses for extra credit, for remedial purposes or for their own edification. At the college level, summer school

offers an opportunity to add one semester's credits to each calendar year, thus permitting candidates for a four-year bachelor's degree to graduate in three years.

Sumner, William Graham (1840–1910)

American social scientist and educator, who "fathered" the introduction of the social sciences into the classic college curriculum in the United States. A convert to the philosophy of England's Herbert Spencer, Sumner became the consummate Social Darwinist, insisting that wealth, status and all other achievements of humans were the result of evolution and natural selection that provide each individual with a specific set of abilities and capacities. Natural selection in the social sense, he insisted, improved society, much as natural selection in the physical sense produced stronger animals and plants and eliminated the weak. To allow sentimentality to interfere with social and economic evolution, he believed, would undermine progress.

A champion of social and economic laissez-faire, Sumner was born in Connecticut and educated at Yale College and at the universities of Geneva, Göttingen and Oxford in Europe before being ordained a minister in the Episcopal Church in 1869. Tired of clerical life, he joined the Yale College faculty as professor of political and social science in 1872, a post he held until his death. A charismatic teacher, he gained a national reputation as a Social Darwinian and an authority on Spencer, whose works, by then, had become the intellectual rage in American education. In addition to fame as a scholar, Sumner gained considerable notoriety as one of the few outspoken opponents of the massive charitable movements sweeping the country in the last decades of the 19th century (to combat such social ills as poverty, unemployment, illiteracy and child labor).

Sumner believed that almost all social ills were the result of social evolution and natural selection, which would in time eliminate the

weak and strengthen American society. His lecture "The Absurd Attempt to Make the World Over" won him a national audience, as did his written work, *What Social Classes Owe to Each Other* (1883). In that book he castigated welfare movements and government programs that drained the pockets of the hardworking, middle-class "forgotten man." An opponent of inflationary fiscal policies and protective tariffs, Sumner was a prolific author. Among his many influential books were *A History of American Currency* (1874), *American Finance* (1875), *Protectionism* (1885), *A History of Banking in the United States* (1896) and *Folkways* (1906), his magnum opus on customs and mores. *The Science of Society* (1927–28), a posthumously edited version of his notes and drafts on the entire range of sociology, became a classic text for many years.

Sunday schools The school systems and local schools maintained and operated by churches, synagogues and a few other organizations to provide sectarian religious instruction to children on Sundays, independently of their regular, day-to-day education. A relatively recent educational institution, the first Sunday school opened in 1780, in Gloucester, England, where the British religious leader Robert Raikes (1735–1811) sought to provide both secular and religious education to lower-class children who worked in factories during the week and could not attend secular common schools. Under Raikes's leadership, the movement spread across England, enrolling an estimated 250,000 children within 10 years.

By 1799, the first Sunday schools were springing up in the United States; over the next 30 years, they became common, serving different purposes for children of different classes and in different communities. On the frontier, where churches were the first public buildings erected in new communities, Sunday schools were often the only schools, and therefore pro-

vided both secular and religious education to all children in the community, much as the church had been the only source of education for children in early colonial settlements. As communities grew large enough or rich enough to build common schools and libraries, the role of Sunday schools gradually receded into the religious sector. "Let Sabbath schools be established wherever it is practicable," suggested the Indiana Sabbath School Union in 1827. "They will answer the double purpose of paving the way for common schools, and of serving as a substitute till they [common schools] are generally formed."

In cities and most industrial towns, Sunday schools continued fulfilling their original purpose of providing secular and religious instruction to poor children forced to work in mines, factories and fields during the week. Sunday schools retained that role until states began enacting compulsory education laws, beginning in the 1850s. The influence of Sunday schools over American education, however, has waxed and waned since the formation of the American Sunday-School Union in 1824. Founded as a publisher of moral and religious texts for children, it soon became a major force in the founding of Sunday schools across the United States. Generally nondenominational, it was on the brink of bankruptcy and extinction during the 1850s, when a leading officer absconded with nearly \$90,000 of organization funds, just as the Civil War was about to divide the nation and further disrupt the movement.

Rescued by the fundamentalist religious leaders DWIGHT L. MOODY and JOHN HEYL VINCENT, the union soon created a uniform curriculum for all Christian Sunday schools, and by the end the 19th century was at the center of a vast, Christian revivalist movement that seemed so likely to engulf American public schools that the Roman Catholic Church decided to establish its own school system to prevent the Protestantization of Roman Catholic children.

The movement's domestic efforts seemed to lose momentum, however, as growing numbers of missionaries turned their attention away from the education of American children and to the establishment of foreign missions to convert Asian, Middle Eastern and African children. In 1889, the first World's Sunday School Convention was held in London, and in 1907 the American Sunday-School Union, which had changed its name to the International Sunday School Union, helped form the World Sunday School Association. In the meantime, the growth of secular public school systems throughout the United States was gradually weakening the influence of Sunday schools in the area of secular education. By the end of World War I, their influence had receded to the confines of their churches.

Today's American Sunday schools vary according to religion. Although most of the Sunday schools of each Protestant denomination have uniform, system-wide curricula and are often run on a national or international basis, Roman Catholic and Jewish Sunday schools are generally organized on a local basis. Both Roman Catholic and Jewish Sunday schools are designed to provide religious education to students who would not obtain it elsewhere. Catholic students who attend parochial schools and Jewish students who attend Jewish schools during the week usually do not attend Sunday school. Only Reform and Conservative Jewish synagogues have Sunday schools, however. Orthodox Jewish synagogues, which require children to attend religious schools during the week, have no Sunday schools. Neither Catholic nor Jewish Sunday schools restrict instruction to Sundays; both hold classes at other times.

superintendent of schools The chief administrative officer of a public school district. Usually hired by the district school board, the superintendent implements board policies

in each district school and coordinates all school programs within the district. The first school superintendents were appointed in Louisville, Kentucky, and Buffalo, New York, in 1937, after the number of schools in each district grew too numerous for the board to supervise directly and assure that each principal adhered to board policies. School superintendents are appointed for their administrative skills rather than for any skills or background as educators. Turnover among superintendents in the United States is notoriously high, because most are hired on a contract basis that limits percentage raises for each contract renewal. By negotiating new contracts elsewhere, successful superintendents can assure themselves substantial pay increases with each move to a new district. Superintendent salaries ranged from \$53,000 to about \$300,000 in academic year 2004–05 but averaged \$111,189. Deputy superintendents earned an average of about \$105,000, and assistant superintendents about \$98,000; amounts increased with length of service, the size of the district's total enrollment and the district's setting, whether rural, suburban or urban.

School superintendents have been notoriously slow in opening their profession to women and minority groups. Although women make up more than 74% of all public school teachers and 35% of school principals, they make up only 13% of school superintendents. Minorities have even less representation, with only 5.1% of all superintendents listed as "persons of color," although they represent more than 9% of all teachers and 30% of student enrollment in American public schools.

supervising principal A virtually obsolete title for a school administrator with supervisory authority over a specific school within a larger district. In a district with, say, three elementary schools, each might be headed by a supervising principal, with a single principal

for the entire elementary school sector based in the largest or most central of the schools. Often a part-time teacher, the supervising principal virtually disappeared by the end of the 1970s.

supervisor A term variously used in American public school systems to mean school superintendent or, more often, assistant superintendent for instruction and curriculum development. Usually an educator rather than an administrator, a supervisor may be hired by the school board as superintendent or simply as administrator in charge of developing curricula, coordinating academic programs and working with teachers to improve instruction.

Supplemental Educational Opportunity Grants (SEOGs) A program of federal grants for exceptionally needy college students. Officially called Federal Supplemental Educational Opportunity Grants, a fixed number of SEOGs of up to \$4,000 a year are distributed on a college-by-college basis for apportionment to eligible students on a first-come, first-served basis, with priority given to PELL GRANT recipients. Once each college's allocation has been distributed, latecomers are excluded from the program, regardless of need.

supplementary readers Books, periodicals and other printed reading materials used as adjuncts to enrich and augment the regular, required reading materials in a class or subject area. Usually optional and pursued by the more gifted students, supplementary reading materials may be suggested in every subject area.

supplementary school A 19th-century term referring to special, separate institutions that compensated for the "deficiencies" of youngsters then considered ineducable. These children included the orthopedically handicapped, blind, deaf, mentally retarded, incorrigible and delinquent youngsters, along with all black

and Indian youngsters deemed unfit to attend regular classrooms. Somewhat akin to some of today's ALTERNATIVE SCHOOLS for children with behavioral problems, supplementary schools were usually operated under private or quasi-public auspices, with a separate school usually established for each category of deficiency. In most instances, local or state laws gave children little choice but to attend such schools when so assigned. In 1838, the father of Mary Ann Crouse of Philadelphia charged the city with violating her Sixth Amendment rights (to a speedy trial and to confront her accusers) by committing her to the House of Refuge. He lost the case—*Ex Parte Crouse*—with the court holding that the city had the right to serve as "the parens patriae, or common guardian of the community." Similarly, in *Roberts v. City of Boston*, the father of a black child, Sarah Roberts, was unsuccessful in his effort to enroll his child in a primary school near his home rather than in a distant, black primary school to which the city had assigned her. The state court denied his claim that the assignment violated educational guarantees of the Massachusetts constitution, saying that the city of Boston had the right to maintain "separate but equal" facilities for blacks.

Supplementary schools all but disappeared following enactment of the Education for All Handicapped Children Act of 1975 and its amendments in 1983 and 1986, guaranteeing access to free public education for almost all the 1 million handicapped children who had hitherto been excluded from public schools.

suspension The temporary expulsion of a student from school for one or more days for violating school rules and regulations. Most frequently used at middle schools and high schools, suspensions may be short-term (10 days or less), long-term (10 days to a full school year), indefinite (without any fixed term, ranging from one day to a year) and extracurricular

(required attendance in classes, but deprived of the right to participate in nonacademic activities). Unlike the disciplinary nature of most suspensions, indefinite suspensions are usually used to remove a student from a situation deemed dangerous to the student or to other students.

Used routinely as the most severe form of discipline short of expulsion, suspensions were the center of a legal struggle in 1975 that sharply modified and curtailed their use. In the case of *GOSS v. LOPEZ*, the U.S. Supreme Court reaffirmed a lower court's affirmation of a public school student's constitutional right, under the FOURTEENTH AMENDMENT, to due process in school disciplinary actions. "Young people do not shed their rights at the schoolhouse door," wrote Justice Byron R. White for the majority, in the 5-4 decision. The case involved nine Columbus, Ohio, students suspended in 1971 during demonstrations arising from racial disorders. State law then permitted the school to suspend students summarily for up to 10 days without granting those students any recourse or appeal.

The lower court had held that suspended public school pupils had the right to notice of charges against them and an opportunity to defend themselves against such charges. In its decision, the Court added that pupils had an "entitlement" to education in states that guaranteed its residents free, primary and secondary education and that states "may not withdraw that right on grounds of misconduct, absent fundamentally fair procedures to determine whether the misconduct has occurred." It held that students "must be given some kind of notice and afforded some kind of hearing," albeit an informal one, before being suspended. Suspension without a hearing deprived the students of their property (the statutory right to an education) and liberty (slurring their school records without proof). As a result of the decisions, most states now require an informal hearing for short-term, indefinite suspensions

and extracurricular suspensions, and a formal hearing for long-term suspensions. Across the nation, only about 6.6% of the more than 3 million public elementary and secondary school students are suspended each year, but there are nonetheless more than 3 million suspensions a year because of multiple suspensions of individual students: A student suspended five times equals five suspensions in final Department of Education statistics. The schools suspend 9.2% of male students and 3.9% of female students. Nearly 100,000 students, of 0.21% of the student population, are expelled from public school each year, males making up about 75% of the number.

Sustained Silent Reading (SSR) A program that originated in the 1960s to encourage interest in reading by designating a regularly scheduled time for everyone in a school to halt all other activities and read, uninterrupted, in total silence, for a designated period of time. Adopted by many schools across the country and designed to encourage an improved adult, as well as student, attitude about reading as a leisure activity, SSR required everyone in the school—students, teachers, staff, administrators and custodians—to relax and read whatever materials they selected. No materials were assigned, although students could use assigned readings if they chose. To eliminate clock watching, timers and bells were used to signal the beginning and end of each reading period, which were often of indefinite (albeit realistic) length. SSR permitted no interruptions.

Suzuki Method An approach to formal instrumental education of preschool children as young as three. Largely limited to violin and piano instruction, the method begins in infancy, with constant exposure of the child to recorded music and integration of music as an element of the family environment. At three, or thereabouts, formal lessons begin, with the

child first learning technique and memorizing musical pieces. The student listens, learns and memorizes a melody by ear, then imitates the teacher's motions and gradually learns to play the piece. Developed by Japanese music educator Dr. Shinichi Suzuki, the Suzuki Method was originally designed for private violin lessons requiring the presence and constant participation of at least one parent, who learned the violin along with the child. Only after rote learning of a sizable repertoire of melodies is the youngster exposed to reading music.

The method did not gain widespread acceptance in the United States until 1964, when Dr. Suzuki and 10 of his Japanese students—many of them beginners—amazed a Music Educators National Conference with their skills. Since then, American music educators have adapted the method to piano instruction and to group instruction for both violin and piano. Ironically, the heart of the Suzuki Method—rote learning—was (and is) nothing new to music education. Generations of musically illiterate children throughout the mountain regions of the South and West have learned to play an instrument by ear, many of them acquiring remarkable artistic skills without being able to read a note of music.

Swann v. Charlotte-Mecklenburg Board of Education A landmark U.S. Supreme Court decision in 1971 that required a North Carolina school board to bus students across district lines to achieve racial integration in public schools. The decision was one of four key Supreme Court decisions that followed passage of the Civil Rights Acts of 1957, 1960 and 1964, outlawing racial segregation in public facilities and translating into law the momentous 1954 High Court decision in *BROWN v. BOARD OF EDUCATION OF TOPEKA*. Although that decision had outlawed racial segregation in public schools, hundreds of southern school districts resisted and, indeed, evaded the spirit

and often the letter of the law. Federal government grants of about \$15 billion to southern school districts had coaxed some into compliance with the Court's order that desegregation take place "with all deliberate speed." Two surveys of southern schools in 1967 and 1968 by the U.S. Commission on Civil Rights, however, found that some districts were continuing to resist desegregation, while others used de facto segregation of school districts to perpetuate racial segregation by virtue of the racial composition of various neighborhoods.

It was the first of these reports, *Racial Isolation in the Public Schools*, that exposed vast de facto segregation of public schools in both North and South. It took four major legal cases, however, to enforce the *Brown* decision and the various federal civil rights acts. *Swann v. Charlotte-Mecklenburg Board of Education* was the last and, in a sense, the most sweeping decision, crushing the last vestiges of resistance to racial integration by outlawing de facto segregation of schools and forcing school districts to bus their children to other districts to achieve racial balance in schools.

In the previous three decisions, the Court had defined desegregation in clear terms and imposed time limits for school districts to desegregate. In *GREEN v. COUNTY SCHOOL BOARD OF NEW KENT COUNTY*, in 1968, the Court outlawed a free-choice plan in New Kent County, Virginia, that gave students of each race the choice of where to attend schools. The Court ordered the district "to take whatever steps might be necessary to convert to a unitary system in which racial discrimination would be eliminated root and branch."

In *Alexander v. Holmes County Board of Education* the following year, the Court angrily defined "with all deliberate speed" as meaning "at once," ordering school districts in Mississippi "to terminate dual school systems" and "to operate new and hereafter only unitary schools." And in *United States v. Montgomery*

County Board of Education the same year, the Court established racial ratios for teacher assignments in Alabama and numerical goals for pupil assignments. Together with *Swann*, the four decisions ended official resistance to desegregation by local school boards and political leaders. By 1972, a year after *Swann*, 91.3% of all southern black pupils attended biracial schools, compared with only 76.4% in border states and 89.1% in the North and West.

Sweatt v. Painter A 1950 U.S. Supreme Court decision that refused to review its previous decision ordering the all-white University of Texas Law School to admit Herman Marion Sweatt, an African American. The order was based on the failure of the state of Texas to provide “separate but equal” law school facilities for blacks—a failure that “deprived him [Sweatt] of equal protection of the laws guaranteed by the Fourteenth Amendment.” In response to the Court’s previous order in 1946, the state had opened a law school for blacks, but, the Court found, “the law school for negroes . . . had no independent faculty or library. The teaching was to be carried on by four members of the University of Texas Law School faculty . . . [and] the school lacked accreditation.”

In contrast, the University of Texas law school for whites was staffed by a faculty of 16 full-time and three part-time professors. The library contained over 65,000 volumes. Among the other facilities available to the students were a law review, moot court facilities and scholarship funds. “We cannot conclude,” the decision went on, “that the education offered petitioner is substantially equal to that which he would receive if admitted to the University of Texas Law School.” The Court concluded that “the Equal Protection Clause of the Fourteenth Amendment requires that petitioner be admitted to the University of Texas Law School.”

The decision was remarkable in that it ordered racial integration of a particular educa-

tional institution without overturning the half-century-old *Plessy v. Ferguson* decision that upheld the constitutionality of “separate but equal” facilities for blacks and whites. What Sweatt said was that the racially separate law school facilities of the state of Texas were not “equal” and, therefore, were unconstitutional. It went a step further by stating that “the law school to which Texas is willing to admit petitioner excludes from its student body eighty-five per cent of the population of the State. . . . With such a substantial . . . segment of society excluded, we cannot conclude that the education offered petitioner is substantially equal to that which he would receive if admitted to the University of Texas Law School.”

Thus, for the first time the Court concluded that separate educational facilities, simply by virtue of racial separation, were inherently unequal. The decision marked a major shift in the foundation of court decisions that had upheld the constitutionality of racial segregation for more than five decades. In fact, *Sweatt*, along with three other cases—*MISSOURI EX REL. GAINES V. CANADA* (1938), *ALSTON V. SCHOOL BOARD OF THE CITY OF NORFOLK* (1940) and *McLaurin v. Oklahoma State Regents* (1950)—was one of a carefully planned series of lawsuits filed by the National Association for the Advancement of Colored People to build a foundation of precedents that would lead to the momentous 1954 Supreme Court decision in *BROWN V. BOARD OF EDUCATION OF TOPEKA*, declaring racial segregation of schools unconstitutional and thus overturning *Plessy v. Ferguson*.

Swett, John (1830–1913) American educator and “father” of public school education in California. Born and educated in New Hampshire, he graduated from a normal school and taught in district schools from 1847 to 1851, when he joined the California Gold Rush, sailing around Cape Horn. A year later, however, he returned to teaching, becoming a school princi-

pal in San Francisco, where he served for nine years before becoming California state superintendent of public instruction in 1862. In that capacity and until 1867, he not only coaxed the legislature into establishing a tax base for supporting public schools but also wrote the state's first workable school law, established a teacher-certification system with statewide examinations, and provided for uniform textbooks for all state schools. He also established the state teachers' association, and in 1863 helped found the *California Teacher*, the first professional journal for educators in the West. After ending his work at the state level, Swett served variously as a San Francisco school principal, deputy superintendent of San Francisco public schools, principal of the state teachers' college and San Francisco superintendent of public schools. He collaborated in writing several language-arts and geography textbooks and was author of a number of important books, including *History of the Public School System of California* (1876), *Methods of Teaching* (1880), *American Public Schools: History and Pedagogics* (1990) and *Public Education in California* (1911). An innovative teacher, Swett changed California schooling from "keeping school" to "teaching school."

swirl pattern The demographics created by CONCURRENT ENROLLMENT, the growing student practice of enrolling in classes at multiple colleges. At least 33% of college seniors say they took at least one course at another postsecondary institution since first enrolling at the college from which they intend to graduate. Half say they did so to complete their degree requirements sooner and save costs of attending college; 17% say they did so to take easier courses.

(See also TRANSFER STUDENTS.)

syllabication (syllabification) A method of teaching enunciation, spelling, reading and vocabulary skills by dividing a word into its constituent syllables. Derived from the Greek

syllambanein, to gather together, a syllable is the next larger speech unit after a PHONEME and always contains the sound of at least one vowel. There are two broad types of syllabication: phonic and structural, with the former referring solely to word sounds and the latter referring to word structure and the division of words by prefixes, roots and suffixes.

Until the development of acoustical phonetics in the late 19th century and the subsequent development of phonics, children in the Western world almost universally learned to read with the use of a syllabarium. An appendix to the first speller, with its printed alphabet, the syllabarium provided an almost endless list of frequently used syllables in alphabetical order—all of which had to be committed to memory. The introduction of phonics—the "sounding" out of individual letters, letter combinations and whole words—ended the necessity of learning syllables by rote.

syllabus A detailed description of an academic course, including the main topics to be covered, a week-by-week or even day-by-day schedule of subtopics, the required textbooks and readings, recommended readings and homework requirements.

Syms School The first school founded in England's southern colonies, in what is now Virginia. The first free school in the Americas (albeit not "public" in the modern sense), the school was the result of a bequest in 1635 from Benjamin Syms, a planter who left 200 acres of land and eight cows to produce income for a free school "to educate and teach the children of the adjoining parishes of Elizabeth City and Poquoson" (just north of present-day Hampton, near Chesapeake Bay). The schoolhouse was built in 1643 with the proceeds from eight years' crops and calves. The Syms bequest called for proceeds in subsequent years to be used to pay for the education of

poor students. Aside from its importance as the first school in the area, the Syms School stood as a symbol of settler determination to remain permanently in what had been, until then, a highly inhospitable land. An Indian massacre in 1622 ended previous initiatives by the Virginia Company and English investors to establish such permanent institutions as schools, and the Syms school was the first effort by the settlers themselves to build a permanent settlement.

synagogue A house of worship and communal center for Jews. Derived from the Greek word *synagoge*, meaning assembly, the earliest synagogues were indeed meeting places in Greek-controlled Israel during the first century B.C. Imitating the Greek custom of the era, the Israelites established synagogues not as places of worship but as meeting places for study and

“for the reading of the Law and the teaching of the commandments,” according to a first-century B.C. Greek inscription. In contrast, the Jerusalem Temple was the center for prayer, and it was only after its destruction in A.D. 70 that local synagogues began to house religious services. Synagogues remain centers of learning as well as prayer, with adjacent community centers used as sites for regular Sunday school sessions throughout the traditional American school year and for mid-week instruction for youngsters preparing for the Bar and Bat Mitzvah and confirmation rites. Touro Synagogue is the oldest synagogue in the United States, built in Newport, Rhode Island, in 1763.

syntax The rules of grammar that determine sentence structure, including the structures of constituent phrases and clauses, word order, word relations and word forms.

T

tachistoscope A mechanical device to improve a learning-disabled student's perception and reading speed by exposing single letters, words or phrases for limited periods of time.

tactile learning Any form of knowledge acquisition acquired primarily through touch. Widely used in teaching the sight and hearing impaired, tactile learning is essential for all students, from infancy well into adulthood. In infancy, tactile learning is essential for teaching the difference between temperatures and textures. "Touching zoos" that encourage children to touch animals teach children differences between species. For the visually handicapped, tactile reading with the Braille system opens the world of books and periodicals. The visually impaired often depend entirely on tactile learning to establish the facial characteristics, or "look," of those with whom they associate. For the hearing impaired, tactile learning is essential for learning to read lips by feeling the lips of the speaker, the mouth, facial and neck positions. Many reading teachers include tactile learning as an essential element of the multisensory approach to reading instruction. In addition to seeing, saying and hearing a new letter, the student is asked to trace the letter's shape on the paper while reading it aloud.

talking book Originally, a recording of a book for the blind to play at home on turnta-

bles. With the advent of electronic devices, thousands of books are now available for easy listening by the sighted as well as visually impaired.

talking typewriter A curious, short-lived device that spelled out in sound as well as type the letters that children punched on a keyboard. Designed to help them learn to read and write faster, with a minimum of effort, the device was one of many new "teaching machines" that were tried in American classrooms following the Soviet Union's leap into space ahead of the United States in 1957. The *Sputnik* satellite so embarrassed the American government and American educational establishment that hundreds of millions of dollars flowed from the government and private foundations to develop technologically advanced teaching machines that would impart knowledge more quickly. The talking typewriter was no more successful than many other devices of the era, and it was soon abandoned.

Talmud Torah school A Jewish educational institution of the late 19th and early 20th century, for poor boys to attend after school or work, on afternoons and Sundays, to prepare for their Bar Mitzvahs. Devoted to study of the Talmud (law and commentary) and Torah (the Pentateuch, or first five books of the Old Testament), the two most sacred

works of the Jewish religion, Talmud Torah schools were supported by contributions and membership fees. Talmud Torah schools were but one of a variety of Jewish educative institutions in the United States at the turn of the century. Jewish congregational schools met three or four times a week for children of synagogue members. Jewish charitable organizations, settlement houses and orphanages also operated institutional schools for Jewish children, while independent, entrepreneurial teachers operated private day schools called *heders* (cheders), or Hebrew schools. Together, the schools might have formed the basis of an extraordinary, independent religious school system, akin to the one Roman Catholics were building. By 1920, however, a wave of prosperity swept across the United States, and Jews fanned out across the nation, enrolling in secular public or private schools and relegating religious education to the home or synagogue.

Tappan, Henry Philip (1805–1881) Pioneer American educator who, as president of the University of Michigan, helped transform university education in the United States from a fixed curriculum to one that permitted students a choice of electives. Born in upstate New York, Tappan taught for two years before entering Union College, where he studied under the college president, ELIPHALET NOTT, one of the most progressive innovators in early 19th-century higher education. Nott had introduced medical studies, along with courses in agriculture, foreign languages and engineering—all of them practical innovations later adopted by almost all but the most elitist, private American colleges such as Harvard and Yale.

After studying for the ministry and becoming pastor of a Pittsfield, Massachusetts, Congregational church, Tappan returned to teaching in 1832—at the University of the City of New York (later, New York University). He retired to full-time writing in 1838 but was named first

president of the University of Michigan in 1852. He stunned the world of education by organizing the school along German lines, providing a wide range of elective courses that permitted students to follow their own interests instead of being tied to a single, impractical, fixed classical curriculum. Science was raised to equal status with classical courses, and the number of courses in other disciplines was increased to make the university a truly comprehensive educational institution. Students were treated as adults, with freedom to enter and leave the campus as they pleased. Tappan's work drew nationwide attention, and, within a decade, universities across the United States were adding some elements of the Michigan model to their institutions. In 1863, Tappan was forced to resign after a bitter dispute with the regents over what they considered his overly liberal policies. A prolific writer on religious and philosophical topics, his one notable secular work was *Elements of Logic* (1944).

taxonomy A system of orderly scientific classification, with items classified from the simplest to the most complex or from lower-order to higher-order species. In education, University of Chicago psychology professor and educator Benjamin S. Bloom and his colleagues developed the first taxonomy for learning, dividing learning into three domains: cognitive, affective and psychomotor. Each domain was then divided into numerically coded classifications. Thus, the cognitive domain was subclassified and coded as follows: knowledge (1.00); comprehension (2.00); application (3.00); analysis (4.00); synthesis (5.00) and evaluation (6.00). Each class, in turn, was divided into coded subclasses, such as 2.10 for translation (within the 2.00 comprehension classification) and 2.20 for interpretation (again, within the 2.00 comprehension classification). The purpose of such a breakdown was to pinpoint the goals of a class or institution

and to use it as a foundation for rebuilding the curriculum to meet those goals.

Taylor, Harold A. (1914–1993) Canadian-born educator whose 1971 criticism of American education helped provoke a bitter, nonproductive debate over the condition of American higher education. After earning his B.A. and M.A. at the University of Toronto and his Ph.D. at the University of London, he taught philosophy at the University of Wisconsin in Madison from 1939 to 1945. He was president of Sarah Lawrence College from 1945 to 1959, also serving on the faculty of the New School for Social Research from 1947 to 1949. A prolific author of books and essays that examined and criticized higher education, Taylor gained considerable notoriety in 1971 with his work *How to Change Colleges*. In it he charged:

. . . what is wrong with the [American] university as a teaching institution is precisely this: It has no philosophy of learning, no unifying principle around which reforms can be made, either to meet the problems of student unrest or to engage the students in their own learning.

It has instead a system of administrative conveniences. The whole apparatus of departments, divisions, institutes, lectures, research, grades, examinations, academic credits, classes and faculty appointments is based on an administrative plan for dealing with students and academic subject matter, not a philosophy.

teacher In the broadest sense, anyone who imparts information or knowledge to another. Parents are usually their children's earliest teachers. At two or even earlier, the role is shared somewhat with one or more part-time or full-time child-care aides, including relatives, baby-sitters, nannies or governesses. At four, preschool workers and peers assume teaching roles, until at five, in the kindergarten,

the child encounters his or her first professionally trained teacher. Thereafter, trained teachers will dominate the instructional process through elementary and secondary school, college and graduate school, providing an ever increasing proportion—at times a dominant proportion—of the data and knowledge presented to the individual. In contrast, the parent's role as teacher will gradually diminish, while peer teaching influences will fluctuate widely, according to the individual student's own knowledge, personality, age and environment.

Professional teacher training and certification has varied widely over the centuries, with the first teachers in the Western world having been clergymen—exclusively Catholic until the Protestant Reformation. Ordination as a priest or minister was tantamount to certification as a teacher. Similarly, among Jews, the rabbi was the teacher of all school-aged children in the congregation.

The first certification, or licensing, of teachers in the Western world came with two pieces of Elizabethan legislation, the Act of Supremacy and the Act of Uniformity. Both gave the English monarch authority to appoint all churchmen and forced those who would teach to take an oath declaring the supremacy of the queen in all matters secular and religious. The laws mandated the rites and ceremonies of the Book of Common Prayer as the official liturgy of the Church of England. They ordered that "every parson, vicar, and curate shall upon every holy day, and every second Sunday in the year, hear and instruct all the youth of the parish for half an hour at the least before evening prayer, in the Ten Commandments, the Articles of the Belief, and in the Lord's Prayer, and diligently examine them, and teach them the catechism set forth in the book of public prayer."

The same laws applied to teachers in the American colonies, but the spread of the population into the wilderness necessitated more and more secular teaching, with the task joined

by parents, itinerant teachers and older literate students. Many mothers organized so-called dame schools in their kitchens, where, for a fee, they instructed their own as well as their neighbors' children in reading, writing, calculating and Scripture.

Ministers, however, remained the primary teachers in most communities, gathering children of all ages into the church on Sundays and on some evenings when children were not working. Licensing of such ministers remained the purview of the church. In New Netherland, schoolmasters were appointed by the classis of Amsterdam. In 1664, the licensing of teachers passed over to the British governor, who relied on the archbishop of Canterbury for approval of all teachers. In 1683, the Virginia governor, under instruction from Charles II, ordered every schoolmaster teaching in the colony to obtain a license to teach, either from the bishop of London or from the governor himself. Three years later, the governor ordered schoolmasters to appear before the general court at Jamestown to present evidence of their intellectual competence, uprightness and sobriety, and general conformity to the doctrines of the Church of England—or face removal.

In the century that followed, population expansion required more teachers than the churches could supply. The result was a vast growth in secular schools, usually taught by devout laymen who laced their instruction with Protestant liturgy and prayer. By the late 1600s, many renowned secular teachers had founded their own schools and were earning modest salaries by making teaching a full-time profession. As control of the church over education waned, so did control over teacher licensing. By the middle of the 18th century, teachers had become an amorphous group whose members ranged from semiliterate itinerants, in isolated, rural one-room schoolhouses, to highly educated churchmen in cities such as Boston and New York. But only Har-

vard, William and Mary, Yale and Princeton could boast traditional faculties, licensed by appropriate clerical authorities.

Formal teacher training did not begin in the United States until 1805, when New York City's Mayor (later, governor) De Witt Clinton organized a course of six to eight weeks to train teachers to work in the city's charity schools. In the early 1820s, Catherine Beecher and Emma Willard opened female seminaries to train women to become teachers. The first state-operated "teacher's college" in the United States to train teachers for public school education opened in Lexington, Massachusetts, in 1839, founded by Horace Mann, the founder of public school education in Massachusetts.

Following the Civil War, an acute shortage of teachers forced the emergence of teacher training schools, or normal schools, as they were called. The equivalent of vocational secondary schools, the normal schools were largely established for girls, who were being trained to replace men in classrooms. Men had made up 90% of all teachers in the United States before the Civil War, but thousands died in battle, and those that returned were lured into higher paying jobs in industry. By 1888, 63% of all teachers were women, compared to fewer than 10% 50 years earlier.

As the scope of the teaching curriculum expanded, so did the scope of teacher training, which grew from two-year normal schools into four-year teachers colleges, granting bachelor's degrees in the arts, sciences and education. Later, the curriculum expanded into graduate studies, with the granting of master's degrees and doctorates in education. There are about 4.5 million teachers in the United States, nearly 3.4 million, or about 75%, of whom work in elementary and secondary education and the rest in higher education. Nearly 84% of all teachers and faculty work in the public sector; more than 88.5% of elementary and secondary school teachers work in public schools, and

about 69% of the higher education faculty work in public colleges and universities.

Qualifications for teaching vary widely, with many of the finest private elementary and secondary schools and colleges requiring no state certification or even teaching experience. The most academically selective private schools and colleges tend to rely wholly on the prospective teacher's knowledge of the subject to be taught and on academic credentials. In the public school sector, however, many states required no academic training for teachers until the passage of the NO CHILD LEFT BEHIND ACT OF 2001 (NCLB). Until then, only 23 states required beginning teachers to have majored in the subjects they teach, only 29 required beginning high school teachers to pass subject-matter tests and only nine states required middle school teachers to do so. As late as 2000, only 63% of public school teachers in the United States held degrees in the subjects they taught; only 22% of English teachers, 26% of science teachers and 28% of math teachers had majored in those subjects. Only 49% of Washington State's math teachers had majored in that subject at college, and only 52% of the science teachers in Florida and Tennessee had majored in some branch of science. In contrast, 98% of Pennsylvania math teachers had majored in math, and 97% of Minnesota science teachers had majored in a science in college. Only 40 states have a licensing test for beginning teachers. During the 1960s through the 1990s, 86% of new public school teachers finished in the bottom academic halves of their college classes, with the poorest public school districts—those with students from the lowest income families—most likely to hire teachers with the poorest high school and college academic records. Teachers emerging from the top 25% of their college classes academically remained in teaching an average of only five years, before leaving the profession and moving into other, better-paying work.

In an effort to improve teaching quality in American public schools, a group of leading educators established a National Council for Accreditation of Teacher Education (NCATE) to establish higher national standards for public school teaching and develop tough new national teacher certification tests to replace low and sometimes nonexistent state standards. The first such national certification tests took place at the end of 1994. The program was expected to help revolutionize teaching and teacher certification across the United States.

North Carolina was first to respond to the new tests by promising an automatic 4% salary increase (and fee reimbursements) to all teachers who earned their national certificates. Iowa, North Carolina, New Mexico, Oklahoma, Massachusetts and Ohio waived state certification requirements for nationally certified teachers. Universal acceptance of the national certification program was expected to raise national standards of teaching and help establish national educational standards in public schools. National certification was also expected to cut the high cost of administering public education by eliminating state bureaucracies in charge of the cumbersome state licensing procedures. By 2000, 31 states provided financial incentives and 25 states waived local licensing requirements for incoming teachers who obtained national board certification, and about 5,000 of the "new breed" of nationally certified professionals had entered American public school teaching. But NCATE tests did not have the force of law, and many states were reluctant to challenge powerful teachers' unions by imposing new standards. In 2001, Congress decided to do the job by passing NCLB, which imposed new, stricter standards on schools—with the threat of losing federal funding for many programs if they did not comply. By 2005, 48 states had responded by implementing higher teacher certification standards, all

but seven required prospective teachers to pass subject-knowledge examinations, and five required prospective teachers to have majored in the subject or subjects they were to teach.

teacher associate A special teaching position proposed in 1983 in a school-reform scheme of Ernest L. Boyer, educational reformer and president of the Carnegie Foundation for the Advancement of Teaching. Under the scheme, teachers would complete five years of teachers' college and then pass written examinations in English proficiency and subject matter competence before receiving teaching credentials. These credentials, however, would qualify them only for the title of associate teacher. Although associate teachers would carry a full, conventional teaching load, they would work under the constant tutelage and supervision of experienced, specially trained mentors. Associate teachers would earn the title teacher after serving two years and passing review procedures conducted by the mentor, other school personnel and students.

teacher burnout A stress/fatigue syndrome that often leads to sleeplessness, moodiness, jumpiness, irritability and unprovoked anger toward students, colleagues and family members. Causes have been variously related to conflicting, multidirectional pressures (from children, parents, peers and administrators), excessive noninstructional chores, diminishing satisfaction and sheer boredom from spending so many hours isolated from adults and with demanding, immature people. Most public schools have no faculty lounges for teachers to gather together in adult company and share problems. Few secondary school teachers have permanent classrooms or even a desk, let alone private offices. Shortages of teaching materials also contribute to teacher frustration. In the last decades of the 20th century, the threat of violence has emerged as yet another factor

leading to teacher burnout. More than one-fourth of teachers polled by the *New York Times* in the early 1980s said that they had been assaulted in the halls, parking lots or classrooms of their schools. The figure was one-third in New York City.

Still another factor in teacher burnout is the repetition of the same materials, year after year, with none of the excitement of moving to another area of a teacher's expertise. Burnout, however, is not limited to the teaching profession: Its emergence in many occupational fields during the 1980s and 1990s has made it so fashionable a syndrome that some psychologists are beginning to question its validity as a verifiable illness.

teacher centers Independent, educative organizations that provide teachers with in-service programs, conferences and other professional development opportunities in a nonthreatening environment away from their schools or colleges. Originally established in England as autonomous teacher-run centers for other teachers to turn to for professional help, their equivalents in the United States are federally funded and can only be 51% operated by teachers. Unlike English centers, American centers are open to administrators, parents, university professors, teacher's aides and even students, as well as teachers, with the goals of each center varying according to local needs.

teacher competency tests A variety of examinations aimed, on the one hand, to test teacher teaching skills and, on the other, to determine the depth of teacher knowledge of the course he or she will teach. The first type of test asks teachers to demonstrate specific, predetermined teaching behaviors and responses considered essential to good teaching. The second battery simply measures knowledge and ability to use materials from the courses the teacher will teach. Both are elements of national

teacher certification tests developed in 1994 by the National Board for Professional Teaching Standards.

(See also **TEACHER**.)

Teacher Corps A program started under the Higher Education Act of 1965, when shortages of qualified teachers were threatening the quality of public education across the United States. The Teacher Corps was created to underwrite the expansion of teacher training programs, enlarge the teacher pool in disadvantaged areas and encourage minority group members to enter teaching. Initially, the Teacher Corps underwrote programs that produced junior-level teaching interns who received two years of combined classroom and field training under the supervision of participating teacher training institutions. In 1974, however, the teacher shortage all but disappeared, and the Teacher Corps was converted into a retraining program for teachers on the job. With little direction and no legal authority to affect standards of education, the Teacher Corps was gradually phased out of existence in the 1980s. During its existence, it trained 11,000 interns and retrained 8,000 teachers at an average annual cost of \$26 million.

teacher education The formal and informal instruction and training required for entry into the teaching profession. In almost all American states, a bachelor's degree is a minimum requirement for teaching in elementary and secondary schools and in some colleges. Colleges, however, usually require teachers to have a master's degree and, in many cases, a doctorate.

Public elementary and secondary schools require teachers to complete a minimum number of courses in the field of education, in addition to completing their work for a bachelor's degree. More simply, teachers may obtain a bachelor's degree in education, completing a

four-year program of general education study, which includes teaching methods courses, field experiences, student teaching and so-called content courses involving in-depth study of specific courses the future teacher intends to instruct. In addition to a degree, teachers must pass examinations in each state to obtain a state teaching certificate or license to teach in public schools. A few states also require teaching certificates for private school teachers. In the mid-1990s, a new movement got under way to establish a national teaching certificate. More than 1,500 four-year colleges offer undergraduate and graduate degrees in some form of teacher education. In 2003, Western Governors University, a Salt Lake City-based online university sponsored by 19 western states, opened the nation's first online teachers' college. The college offers degrees and certification to prospective as well as employed teachers through a combination of online courses and 12 weeks of "demonstration teaching" in a classroom under the supervision of an experienced teacher. Operating under grants from the U.S. Department of Education, the university's education program is accredited by the National Council for Accreditation of Teacher Education and meets the licensing standards of all states.

Teacher education does not stop with the acquisition of a teacher certificate, however. In-service education, or continuing training in workshops, seminars, field activities and advanced coursework and degree programs, is generally required throughout a teacher's career—to acquire the latest teaching skills and qualify for salary increases and promotions to master teacher status.

Despite the complex requirements to obtain the right to teach in American public schools, the quality of students entering teaching has been notoriously low for decades. Indeed, the Carnegie Foundation for the Advancement of Teaching found that, in 1983, most public school teachers had graduated

“from the lower half of their college classes,” which they had entered with the lowest average SAT scores. Nor did any state require any minimum college grades or standardized test scores to teach a particular subject or run a school. Even more disturbing was the lack of any requirement that teachers have degrees in the subjects they taught. In 1991, 15% of all public schools in the United States and 23% of all inner-city schools had vacancies they could not fill with qualified teachers. By 2000, only 63% of all public school teachers in the United States held a degree in the subject that they taught, with the percentage dropping to as low as 50% in some states. Only 29 states required beginning high school teachers to pass subject-matter tests, and only nine required beginning middle school teachers to pass such tests. All but one state, however, waived the tests under “special circumstances.” Although 23 states required teachers to have majored in the subject they taught, 22% of English teachers, 26% of science teachers and 28% of math teachers had not majored in those subjects.

Particularly at higher levels of instruction, most teachers have traditionally taught subjects they knew and enjoyed. It was not until the 17th and 18th centuries, as mass education began spreading across western Europe and the American colonies, that society began demanding specific skills in instruction that required some formal training. In 1685, the French priest Jean Baptiste de la Salle (later canonized) established the first formal teacher training school in Reims. Called the Institute of the Brothers of the Christian Schools, it was followed by a host of other church-sponsored teacher training schools in France and Germany. In almost all cases, teachers were taught that ignorance was the result of the devil and that infliction of pain was the most effective means of “beating the devil” out of children and allowing knowledge to seep into their minds. The first radical change in teacher education came in 1794, again in France, where the

world’s first government-sponsored teacher training school was built. Using the principles of JEAN-JACQUES ROUSSEAU as a basis for training teachers, the school taught future teachers to concern themselves primarily with the mental and physical development of students and only secondarily with subject matter. The principle remains the basis of teacher education to this day.

Although the German-born teacher CHRISTOPHER DOCK published a volume on teacher training in 1770, it was not until 1839 that HORACE MANN established the first formal training school for public school teachers in the Americas, in Lexington, Massachusetts, to staff the public school system he had founded in the state. By 1875, however, most state legislatures had passed laws establishing similar public school systems and teacher training schools to furnish them with instructors. Called “normal” schools (derived from the Latin *norma*, or standard), most were two-year programs designed to follow secondary school. As educators developed various theories of pedagogy, and psychology expanded to include various theories of learning, normal schools gradually expanded into four-year teachers’ colleges. The arrival of John Dewey and other theoreticians into the field of pedagogy so expanded the study of education that it evolved into a broad field of specialties, including preschool education, elementary education, early adolescent and late adolescent education, special education, education of the severely handicapped, etc., with a wide variety of undergraduate- and graduate-level courses and degrees available in each area.

Although graduate-level courses were established in many specialized areas, no standards were ever set for educating teachers to teach such conventional courses as elementary, middle and high school mathematics, English, history, modern languages and science. In 1986, the Carnegie Corporation of New York drew up a sweeping plan for reforming educa-

tion, calling for the elimination of undergraduate teacher education programs and the forcing of future teachers to study the liberal arts and sciences as undergraduates in college—and then major in a particular subject in which they would gain the specialized knowledge needed to teach it. The foundation recommended that teacher education itself become a master's program, followed by internships and residencies such as those required of doctors. In 1991, educator JOHN GOODLAD implemented the foundation's recommendations by establishing eight pilot programs at graduate schools of education across the United States to train future teachers already equipped with bachelor's degrees in the arts or sciences, but not in education. In an effort to improve teaching quality in American public schools, a group of leading educators established a National Board for Professional Teaching Standards to set high national standards for public school teaching and develop tough new national teacher certification tests, and, in 1994, the first prospective public school teachers began taking the tests. By 2000, 31 states provided financial incentives, 25 states waived local licensing requirements for incoming teachers who obtained national board certification, and the first 5,000 nationally certified teachers entered American public schools. In 2001, Congress imposed new, even stricter teacher standards on public schools with the NO CHILD LEFT BEHIND ACT OF 2001 (NCLB). By 2005, 48 states had responded by implementing higher teacher certification standards, all but seven required prospective teachers to pass subject-knowledge examinations and five required prospective teachers to have majored in the subject or subjects they were to teach.

(See also **TEACHER**; **TEACHER COMPETENCY TESTS**.)

teacher evaluation Any of a variety of formal and informal programs for assessing the

competence and effectiveness of an instructor. Designed to improve instruction as well as to rid schools of incompetent teachers, teacher evaluations usually depend on one or more of several approaches. Formal, written ratings by students are commonly used to evaluate teachers at many colleges. Though not ignored at the primary and secondary school level, student opinions about teachers are seldom solicited, although universal likes or dislikes eventually filter through any school system to the administration. A more common evaluation system in elementary and secondary schools is classroom observations by principals, teacher supervisors, outside consultants, evaluating teams, teaching peers or videotaping. Another widely used form of teacher evaluation is so-called product evaluation, whereby year-to-year student-achievement test results and other measurements of student academic growth are compared to those of similar students under the guidance of other teachers. A fourth type of teacher evaluation is based on self-evaluative forms filled out by teachers themselves, while a fifth type of teacher evaluation relies almost entirely on objective observation instruments. The Flanders Interaction Analysis System, for example, relies on recording selected classroom events such as teacher activities and pupil responses.

Although evaluation procedures vary widely from school to school, almost all attempt to objectify procedures by providing printed criteria listing desirable teacher competencies and student behavior and responses, along with printed forms for noting appropriate classroom observations. Teachers usually receive one written evaluation each year, and they are usually able to provide a written rebuttal or file grievances against what they consider to be inappropriate evaluations.

teacher noninstructional chores A variety of paid and unpaid activities, unrelated to

teaching, that are arbitrarily assigned to teachers. A source of bitterness between teachers and administrators, noninstructional chores vary from school to school, depending on school budgets. Among such chores are monitoring of halls and lunchrooms; chaperoning and supervising student extracurricular activities; coaching sports; driving buses and vans on various class and school trips; filing reports and other paperwork on absent and tardy students and on student academic progress; verifying student identification cards, checking passes and excuses and counseling students. With the average student to guidance counselor ratio in American public high schools at more than 500:1, students invariably turn to their favorite teachers for counsel. Depending on the school, noninstructional activities can consume as much as 20% of the time teachers spend on campus.

teacher recognition and rewards Any of a variety of forms of recompense for instructional achievement. Most teacher recognition and rewards are either extrinsic, ancillary or psychological, with the first usually in the form of earnings, special awards, status and authority. Ancillary rewards usually include job security, spare time, convenient schedules, freedom from rivalries and pleasant working conditions. Psychic rewards come from job satisfaction and the pleasure of reaching students and success in helping them learn. Although more than 86% of American public school teachers responded to a 1982 survey by the Carnegie Foundation for the Advancement of Learning that psychic rewards were the most important of the three types, more than 73% reported that "student attitudes toward learning had a negative effect on their job satisfaction" and that many students "don't like to study anymore," "aren't interested in learning" and "don't seem to care about school." Others reported "subtle disrespect many adults have

for teachers" as another source of dissatisfaction with their work. Many public school districts offer cash or other bonuses to the most successful teachers, while some use the promise of promotion to the higher-paid post of "MASTER TEACHER." Critics of such individual rewards maintain they create an atmosphere of potentially bitter internecine faculty competition in a school and can work against the academic interests of the students. Some school districts have experimented with incentives that reward the entire staff and faculty equally for significant improvements in the school's academic achievement, thus encouraging faculty and staff to cooperate in a team effort.

teacher's aide A paraprofessional school worker, usually assigned to one or more teachers to perform noninstructional duties such as clerical work or supervision of students who have been isolated in quiet areas to do their work. The first teacher's aide was introduced into Bay City, Michigan, schools in 1953, to ease the nonteaching burdens of teachers in overcrowded classrooms. The teacher's aide movement subsequently spread to schools with similar problems across the United States. As their numbers and responsibilities increased, community colleges began offering formal training and associate degrees in the new field. Today, responsibilities of teacher's aides in many schools have extended into tutoring, especially with bilingual children.

teacher salaries The wages paid to instructors in elementary and secondary schools and institutions of higher education. Historically, a survey of actual dollar figures is relatively meaningless because of the constant inflation that has lowered the real purchasing power of the U.S. dollar. In current dollars, the average annual salary of public elementary and secondary school teachers climbed more than 300%—from about \$8,600 in the 1969–70 school year

to about \$46,600 in 2004–05—a rise of about 430%. In constant dollars based on purchasing power, however, the increase was only 10%, or less than one-half of one percent a year and far less than the rate of inflation. From another perspective, the \$8,600 a teacher earned in 1969–70 was 41% higher than the average production worker’s pay of \$6,100. The average teacher wage of \$46,600 today is 41.2% more than the average production worker’s pay of \$33,000.

Private school teachers earned 31% less than public school teachers, but they worked a shorter school year and faced less classroom stress because private school admissions selectivity minimizes the number of unstable students.

Women teachers earned about 11% less than men in public schools and nearly 24% less in private schools, but the differential was largely due to there being more women than men in lower-paying elementary school jobs and more men than women in higher-paying high school jobs. High school teaching pays 7.2% more than elementary school teaching in the public sector and nearly 26% more in the private sector. In general, teachers younger than 30 years old earn 22% less than the average for all teachers and 25% less than the average professional wage for their age group. The national average starting salary for teachers is less than \$35,000 a year, compared with starting salaries of \$48,000 for mechanical engineers, \$60,000 to \$90,000 for beginning lawyers and \$70,000 to \$100,000 for beginning computer analysts.

Teacher salaries vary widely from state to state; California salaries, the highest in the nation in 2005, average nearly 22% above the national average, and South Dakota salaries are by far the lowest at 30% below the national average. Ironically, South Dakota students rank sixth in the nation in reading proficiency and seventh in mathematics proficiency. Iowa’s

teacher salaries are more than 14% below the national average, and Iowa’s students rank eighth in the nation in reading proficiency and ninth in mathematics proficiency. The 10 states with the highest teacher salaries in 2005 were California (\$56,283), Connecticut, (\$54,362), New Jersey (\$54,166), Michigan (\$54,071), New York (\$52,600), Massachusetts (\$52,043), Pennsylvania (\$51,800), Illinois (\$51,289), Rhode Island (\$51,076) and Delaware (\$50,772). All were about 10% or more above the national average of nearly \$46,000 at the time, but only one, Massachusetts, ranked among the top 10 states in academic proficiency. Its students ranked first in the nation in reading proficiency and second in the nation in mathematics proficiency.

Although salaries in the different states may change from year to year, their relationship to the national average has generally remained constant over several decades. Here are the percentages by which each state’s average teacher salary varies from the national average:

Alabama	-17%
Alaska	10.6
Arizona	-10.5
Arkansas	-17.2
California	21.6
Colorado	-9.0
Connecticut	19.8
Delaware	8.3
District of Columbia	5.3
Florida	-12.1
Georgia	-1.3
Hawaii	-4.6
Idaho	-11.4
Illinois	-10.6
Indiana	-1.1
Iowa	-14.4
Kansas	-14.4
Kentucky	-15.1
Louisiana	-18.7
Maine	-16.5
Maryland	8.0
Massachusetts	12.6

Michigan	17.9
Minnesota	-5.6
Mississippi	-25.5
Missouri	-15.0
Montana	-23.1
Nebraska	-18.9
Nevada	-8.8
New Hampshire	-10.7
New Jersey	19.0
New Mexico	-18.4
New York	16.4
North Carolina	-4.5
North Dakota	-27.8
Ohio	-1.5
Oklahoma	-22.2
Oregon	3.1
Pennsylvania	13.2
Rhode Island	11.4
South Carolina	-10.7
South Dakota	-30.0
Tennessee	-13.8
Texas	-12.2
Utah	-16.3
Vermont	-12.2
Virginia	-6.6
Washington	-2.7
West Virginia	-17.8
Wisconsin	-5.5
Wyoming	-15.3

teachers' institutes Intensive, multi-day or week-long training programs for teachers. Usually limited to lectures or seminars on specific topics such as mathematics or reading instruction, teachers' institutes originated in the early 19th century as a form of teacher training prior to the establishment of teachers' colleges. HENRY BARNARD organized the first such institute in Hartford, Connecticut, in 1839, and their use as training vehicles spread across the United States. By the early 20th century, state and county school superintendents scheduled training institutes on a regular basis, requiring all public school teachers to attend training programs dealing with their specialties. Especially useful for teachers in rural schools, institutes provided

an efficient, inexpensive substitute for in-service training and continuing education at distant teachers' colleges.

teacher strikes Short- or long-term work stoppages by the instructional staff at a school or college, often resulting in the closing of the institution and cessation of educational services. Elementary and secondary public schools whose teachers are unionized are the targets of almost all teacher strikes. Like strikes by other public employees, teacher strikes are illegal in almost all states, and school boards have a variety of remedies for forcing teachers back into their classrooms. These include court-imposed fines levied against a union and its leaders and the jailing of union leaders. The ill-will created by imprisonment of professionals has made most school boards reluctant to resort to such tactics, with the net result that the more militant union locals—usually in major cities such as New York or Chicago—often strike with impunity when their contracts expire.

teacher turnover The ratio of new teachers hired to those departing from a school or college staff. Teacher turnover rates usually reflect teacher satisfaction or dissatisfaction with their working conditions at a given institution and often hint at the quality of education at that institution. Although low teacher turnover can be an indication of relative stability in the life of an institution, it can also be an indication of curricular and pedagogic stagnation. On the other hand, high teacher turnover invariably produces institutional instability and a decline in educational quality. In addition to dissatisfaction with working conditions, teacher turnover can result from the same factors—such as retirement, illness, death, better job offers and desire or need to obtain additional professional training or education—that produce turnover in any industry. In general, academically successful schools have faculties composed of

one-third of teachers with one to five years' service, one-third with five to 10 years' service and one-third 10 years' or more service, with turnover rates of 5% or less. In the public school sector, teacher turnover averages 14.3%, with the vast majority leaving the profession within five years. The turnover rate jumps to 16%, however, for math and science teachers, whose pay is a fraction of what their educational backgrounds command in private business. The national average starting salary for teachers is about \$35,000, compared with an average of \$48,000 for starting mechanical engineers, \$60,000 for beginning lawyers in the public sector and \$90,000 in the private sector and \$70,000 to \$100,000 for beginning computer analysts.

Teacher Union Reform Network of AFT and NEA Locals (TURN) An organization of teacher unionists intent on reforming public schools by improving public school instruction and curricula, improving teacher training, and, in effect, making public schools more like private schools in terms of academic achievement. Founded in 1995 by leaders of the UNITED FEDERATION OF TEACHERS and the NATIONAL EDUCATION ASSOCIATION locals in Rochester, New York, and Los Angeles, TURN set out to create a network of local union leaders to emphasize improvements in public education as part of the collective bargaining process. Originally feared as an emerging third union, TURN focused solely on educational reform during its first 10 years, believing that it could win improvements in teacher wages and working conditions by improving schools. To that end, 13 participating locals helped found the Institute for Teacher Union Leadership in 2003 to train future union-local leaders to help implement reforms in public schools.

teacher unions Labor organizations made up of teachers and other school staff members

that engage in collective bargaining with school boards and boards of trustees. There are three major teacher unions, all of them national: the American Federation of Teachers, with about 540,000 teacher (and 400,000 non-teacher) members; the National Education Association, with about 2.4 million members, and the American Association of University Professors, with more than 40,000 members at 900 public and private two-year and four-year colleges. Neither NEA nor AAUP are labor unions in the strictest sense. While AFT began in 1971 as an entity within the huge American Federation of Labor, NEA and AAUP began as professional organizations and remain so to this day. Local chapters of each organization, however, began assuming collective bargaining responsibilities for their members in the 1950s. Their bargaining powers are somewhat limited because of laws in most states that ban strikes by public employees, including teachers at public schools and colleges. In general, all three organizations represent teachers in negotiating salaries, fringe benefits and working conditions. The bargaining goals of AAUP chapters, however, are more far-reaching in that they include many of the loftier aims of the national organization, namely, guarantees of academic freedom and shared governance with the administration and trustees over major college and university policies. About half the AAUP act as collective bargaining agents.

Because of costly competition for members and bargaining rights, and the recognition that they had many common goals, the AFT and NEA began merger talks in the mid-1970s and again in the mid-1990s, but merger at the national level seemed unlikely. (The AFT had admitted nurses and meat inspectors to improve annual revenues.) On the other hand, there was evidence that local and state affiliates were drawing closer to each other and that they might form local working partnerships while maintaining their affiliation to their national organizations.

(See also AMERICAN ASSOCIATION OF UNIVERSITY PROFESSORS; AMERICAN FEDERATION OF TEACHERS; and NATIONAL EDUCATION ASSOCIATION.)

teacher warranty program A teacher-support system offered by various colleges of education to help ensure the success of their graduates during their first year as probationary teachers. In effect, warranty programs assure employer school districts that the new, inexperienced teachers they hire out of teachers' colleges will have such professional support services as telephone consultations, on-site evaluation and remediation and special workshops that many schools cannot afford to provide. Started in Nebraska in 1984, the teacher warranty program is especially effective in poorer, rural school districts that cannot afford master teachers to serve as mentors for inexperienced, first-year teachers.

teaching assistant (TA) In higher education, a graduate student hired as a part-time aide to a full-time professor and charged with a range of instructional duties that vary from course to course. These duties might include directing laboratory sections of science courses, leading small discussion groups following professorial addresses in lecture courses, grading student papers and, in recent years, teaching freshman- and sophomore-level courses. Although they are paid stipends that usually cover the costs of their graduate school tuition, TAs have been at the center of controversy at major universities since the 1980s. Faced with increased enrollments, along with soaring fuel and other maintenance costs, universities sought ways to expand instructional staffs without expanding their tenured faculty. They turned to their graduate students, offering so-called fellowships—in effect, full scholarships to cover the costs of graduate school tuition—in exchange for teaching elementary college courses. Within a few years, however, TAs were

handling 50% or more of undergraduate classroom teaching, the percentage climbing well above 50% in foreign language classes and often close to 100% in science laboratories. In contrast to average faculty salaries of \$65,000 to \$125,000 a year, depending on rank, TA "stipends" range from as little as \$8,000 to \$30,000, depending on the subjects they teach and at what college. Teaching assistants in English tend to earn between \$12,000 and \$16,000, but their salaries dip as low as \$8,000 in southern public colleges and command as much as \$17,000 at academically selective private colleges in the Northeast. TAs can earn as much as \$25,000 in the biological sciences and \$30,000 in economics. However, only 21% of American colleges and universities provide TAs and their dependents with health insurance; 56% provide TAs but not their dependents with health insurance and 23% provide TAs with no health insurance. None makes any pension provisions for teaching assistants.

Although the use of TAs slashed college investments in instruction, it reduced quality of education, as foreigners with no teaching experience and limited command of English invaded graduate programs. Nonresident aliens now account for 37.3% of the 46,000 doctorates awarded in the United States each year, and students from India, China and Taiwan, having limited command of English at best and unintelligible accents at worst, earn 64% of doctorates in engineering, 47% of doctorates in the physical sciences, 46% of doctorates in business and 35% of doctorates in life sciences. Even as the quality of teaching has declined, colleges and universities have continued to raise tuition rates and fees at rates that exceed the annual rate of inflation—10% a year in the case of public institutions. As the costs of tuition, room and board at some private colleges and universities soared to more than \$45,000, students and parents appealed to their legislators, and the legislatures of 22 states

responded with laws requiring all teachers, including TAs, to be proficient in spoken English. Some legislation allows students to drop courses without penalty and be reimbursed if they cannot understand a TA or professor.

TAs themselves added to the controversy by attempting to organize unions and strike for higher stipends to cover the costs of both their graduate education and living expenses. In 2004, the National Labor Relations Board ruled that striking teaching assistants at Brown University, in Providence, Rhode Island, were not covered by federal labor laws—that they are “primarily students and have a primarily educational, not economic relationship with their university” and, therefore, have no right to strike for increases in the amounts of their fellowships.

teaching load A vague term, variously used to refer either to the total number of “contact hours” a teacher spends in the classroom or to the total amount of time a teacher spends in all school-related activities, including preparation, student counseling, grading papers and tests and noninstructional chores such as lunchroom or bus duty and committee meetings. Regardless of which definition is used, the term remains somewhat meaningless because of the wide variations in teaching conditions, including the number of students in each class, the types of courses taught (for example, laboratory or nonlaboratory) and the types of students enrolled in those courses.

teaching machine Any of a wide variety of mechanical, electric and electronic equipment for displaying programmed instruction for self-teaching. Unlike audiovisual equipment, teaching machines are designed for (and operated by) the individual student rather than student groups. Moreover, they present data at a speed adjusted to the student’s own pace of learning. They also require student responses and, in turn, provide the student with immediate feed-

back about the accuracy of the responses. Hand-operated mechanical devices when they first appeared in the 1920s, teaching machines are now standard computers designed to operate a variety of learning programs for the full range of academic courses.

(See also COMPUTER-ASSISTED INSTRUCTION.)

teaching method Any of a variety of systematic instructional techniques that can be applied to a broad range of academic subjects. The most common teaching methods are the lecture method, the Socratic or discussion method, the tutorial method and COMPUTER-ASSISTED INSTRUCTION. Although all have extensive application, there is no consensus on the advantages of one method over another. Effectiveness varies according to factors that include class size, student abilities and teacher skills.

teaching the test A colloquialism for a teacher’s tendency to focus instruction on preparing students for standardized tests rather than on imparting a broad, in-depth understanding of the subject. Indeed, commercial test-preparation companies do nothing but “teach the test” in preparing students for such examinations as the College Board’s Scholastic Assessment Tests and various graduate school entrance examinations. Teaching the test in conventional schools begins as early as first grade where annual student achievement tests are required, either by the school or by state law. Student performance on such tests is often used to evaluate individual teacher performance, thus contributing to the tendency of some teachers to teach the test rather than the subject. In addition to focusing instruction on specific topics most often covered by such tests, teaching the test also includes instruction in test-taking skills, such as whether and how to guess on multiple-choice questions, quick estimation techniques and question-hopping to score as heavily and as quickly as possible on

those questions whose answers the student knows immediately.

team teaching Any of several forms of classroom instruction involving two or more teachers with complementary instructional responsibilities that depend on different sets of teacher skills. Team teaching at the middle school or high school level generally refers to faculty coordination of course curricula and lesson plans for a particular grade, to assure strong, interdisciplinary instruction with materials studied in each course related to materials in every other course. Eighth grade students might, for example, begin the academic year studying ancient Egypt in history class, the geometry of cubes and pyramids in mathematics, the problems of mass and leverage (using pyramid construction) in physics class, hieroglyphics and the history of art or languages in art class or language arts class.

In elementary school instruction, where a single generalist instructs a class in a variety of subjects throughout the day, team teaching generally refers to a form of dual instruction. The lead teacher in such programs generally handles conventional academics, while a specialist works with individual students or small groups on related special projects in a separate area of the classroom. Projects may range from specialized academic instruction to remedial instruction, depending on student needs.

technical college (technical institute) A post-secondary institution offering courses and training in a variety of nonacademic, vocational skills. Often operated as an entrepreneurial, profit-making school, technical colleges usually offer no liberal arts or science courses and are colleges only in the sense that they serve a post-high school student population. Educational programs at technical colleges range from short-term instruction in clerical skills to complex, multi-year instruction in various crafts,

production skills and semiprofessional technologies such as computer programming, electronics and instrumentation.

technology education A modern, broader and more inclusive curriculum that has replaced industrial arts education in elementary, middle and high schools. Unlike industrial arts education, technology education reaches beyond conventional training in traditional crafts to help students develop an understanding of the cultural, social and political effects of technology, the principles of engineering design and the use of computers and modern electronic technology.

(See also INDUSTRIAL ARTS EDUCATION; WORLD OF WORK)

tech-prep program An approach to vocational education that links the last two years of high school to continuing, post-secondary vocational instruction or training at a community college, technical institute or industrial or business facility. Usually a comprehensive four-year curriculum, tech-prep programs are most often organized by faculty or training aides at the post-secondary facility, with the cooperation and participation of a high school's own instructors. Because it is a comprehensive continuing program linked to post-secondary training or education, high school seniors must work seriously and assiduously throughout their senior year or risk failing the entire program. In addition to the link with post-secondary education, tech-prep programs differ from traditional vocational education in that they require students to focus entirely on nonvocational academics and acquire the same academic skills as college-bound students during their first two years of high school. Tech-prep students begin vocational training in their junior year with the same reading and comprehension skills, analytical skills, computer literacy, problem-solving and decision-making skills, and human rela-

tions and communications skills as students in the academic track. By 2002, more than 1,000 tech-prep programs had been established in 21 states. Enrollment totaled more than 1.25 million high students, or 9.4% of the public high school student population.

(See also TWO-PLUS-TWO PROGRAM.)

teenage pregnancy In education, a growing social problem that disrupts the educational routine of classmates as well as pregnant students. Although the vast majority of pregnant teenagers are forced to take voluntary leaves of absence or drop out of school, many schools automatically suspend or expel pregnant girls. Others segregate their pregnant girls into separate classrooms, while some school districts send pregnant teenagers to alternative schools to attend special classes for dysfunctional students. After reaching a peak of 82 births per 1,000 teenagers in 1960, the birth rates among teenagers declined in 2002 to their lowest level in 40 years—43 births for every 1,000 girls aged 15 to 19. There were no national statistics on actual teenage pregnancies, and available figures do not include stillborns or abortions. Birth rates among African-American girls fell during the same period from about 160 per 1,000 to 66.6, and the rate for white girls dropped from 80 to 39.4.

telelecture Live instruction delivered to television monitors at remote locations via telephone or cable lines. Called teleconferencing in the business and financial world, telelectures permit two-way audiovisual communication between lecturer and students, with questioners seen and heard by all participants in the telelecture. Now largely replaced by distance learning over the Internet, telelectures proved particularly useful (and economical) for simultaneous, specialized instruction of small groups of students at remote, rural schools, which individually might not have enough students to warrant

the cost of a teacher in a specific course—a foreign language, for example. At the university level, telelectures permitted guest lecturers from one university to address student audiences at other campuses without incurring any travel time, extra lecture time or other costs.

television The transmission over wires or through space of sound and images. Invented in the 1920s by scientists at General Electric Co., Westinghouse Electric Corp. and elsewhere, television technology was not converted into a commercial medium until April 10, 1939, when Radio Corporation of America broadcast a speech by President Franklin D. Roosevelt at the opening of the New York World's Fair. RCA's National Broadcasting Co. subsidiary began broadcasting daily programs in New York, and Columbia Broadcasting Corp. and Dumont Corp. soon followed suit. World War II, however, postponed development of the medium until 1945. The number of stations grew dramatically—from 30 at the end of 1946 to 104 by 1950 and nearly 600 a decade later. The number of households with television sets mushroomed from 8,000 in 1946 to 5 million in 1950 and nearly 46 million, or 80% of American households, in 1960. By 1995, 98% of American households had at least one television set, and 64% had two or more sets. Television viewing by children, however, dropped dramatically during the last years of the 1990s, with adolescents 12 to 17 watching an average of only 2 hours 17 minutes a day in the 1998–1999 academic year, compared to 3 hours 7 minutes the year before. Viewing by children ages two to 11 dropped from 3 hours 49 minutes to 3 hours 3 minutes.

From its beginnings, television programming combined many of the most effective techniques of radio, cinema, stage, circus, newspapers, magazines and aggressive salesmanship to produce the most influential medium and educative institution during the

second half of the 20th century, surpassing even formal schools and colleges in its educative reach and influence. Offering the greatest variety of educative materials and entertainment of any medium in history, it carried both on-the-scene and after-the-fact news to audiences of unprecedented size, reaching an estimated 600 million for the live telecast of Neil A. Armstrong and Edwin Aldrin, Jr., stepping from their space vehicle onto the surface of the moon in 1969.

Both commercial and educational television were often brilliant in fulfilling their obligation to serve the public interest. They educated and informed millions who had never had and would never have had access to documentaries, theater, concerts, opera, movies and dazzling variety shows. Television reached the illiterate, the homebound, the newly arrived immigrant and most especially the poor. Television taught disenfranchised Americans their constitutional rights and was in part responsible for the success of the civil rights movement that ended school segregation and assured millions of African Americans of the right to vote. Battlefield television news reports were a major factor in changing public perception about and attitude toward the war in Vietnam.

But television has also been responsible for much miseducation by filling home screens with a ceaseless barrage of commercials, violence and mindless entertainment. Targeting impressionable children as well as adults, commercials portray junk food as nutritious, junk toys as educational and garish vehicles as necessities. Television soap operas and prime-time dramas portray vulgar and violent behavior as justifiable, parents and the elderly as stupid, silly and helpless, uninhibited sexual activity as a healthy norm, semiliterate sports participants as "scholar-athletes" and criminal entertainers as beloved icons. Newton D. Minow called commercial television programming a "vast

wasteland" in 1961, when he was chairman of the Federal Communications Commission, in charge of regulating licensing procedures but with no power to control programming. More than two decades later, Lawrence A. Cremin, president of Teachers College, Columbia University, charged that television "was failing to inform, educate, and entertain the public at the highest levels of quality and . . . was proffering an indefensible potpourri of violence, escapism, and pap that moved the young to aggressive behavior and their parents to intellectual and moral somnolence."

Similar criticisms have been leveled, at one time or another, at virtually every other public medium, including magazines, newspapers and radio; at producers of film, concert, stage and other productions and at the Internet. Unfortunately, the growth of television has been accompanied by a dramatic growth in juvenile crime and other dysfunctional student behavior in the United States, along with a perceived decline in the influence of schools on American children. As a vague, faceless institution, television has proved an easy scapegoat for parents, teachers and political and civic leaders to use to deny any responsibility for the problems of young Americans.

(See also CORPORATION FOR PUBLIC BROADCASTING; EDUCATIONAL TELEVISION.)

Tennessee The 16th state to join the Union, in 1796. A sparsely settled frontier state, Tennessee had an agricultural economy until the mid-20th century. Although the state's first colleges, the University of Tennessee at Knoxville and Tusculum College at Greeneville, were founded in 1794, the state did not establish a public school system until a century later, in 1873. Tennessee has about 1,625 public elementary and secondary schools with a total enrollment of nearly 930,000—more than 28% of them minority students and more than 17% living in poverty. Student academic proficiency

has maintained a consistent ranking in the bottom quintile of the nation's states for a decade, with no signs of improvement. The state has nine public four-year and 13 public two-year institutions of higher education and 56 private four-year and 17 private two-year institutions. Graduation rates of undergraduates at all four-year schools are 49.1%. The private colleges, including several historically black institutions such as Fisk University, enroll one-third of all college graduates in Tennessee. Among other notable private institutions are Vanderbilt University, in Nashville, and University of the South, in Sewanee.

Tenth Amendment That section of the Constitution that effectively vests control over education *inter alia* to the states. The amendment, the last of those grouped as "The Bill of Rights," is short and to the point: "The powers not delegated to the United States by the constitution, nor prohibited by it to the states, are reserved to the states respectively, or to the people." A handful of American leaders—notably John Adams, THOMAS JEFFERSON, JAMES MADISON, BENJAMIN FRANKLIN and BENJAMIN RUSH—had urged the Constitutional Convention of 1787 to make universal public education a constitutional right of all Americans. Their appeal was rejected by representatives of the powerful textile lobby, whose cotton and cotton goods provided one of the economic mainstays of the new republic. The northern cotton mill owners depended on child labor to keep wages down, while southern plantation owners depended on slave labor, including children, to pick the cotton that fed northern mills. Both feared that universal public education would force children out of the mills and fields and into classrooms and create labor shortages that would drive wages up. In addition, southerners feared that universal public education would also mean educating black children and would lead to manumission.

tenure A status granted to teachers protecting them from dismissal for other than contractually specified reasons. These are usually limited to "cause" (incompetency, immorality, criminal acts or inappropriate conduct) or unforeseen and unavoidable upheavals in the workplace (a lack of students for a particular subject or staffing reductions because of a consolidation of schools). Tenure (derived from the Latin verb *tenere*, to hold) was first granted to American public elementary and secondary school teachers in Massachusetts in 1886. It was designed to protect them against unjust dismissal and undue influence and control by political and religious groups and other non-educational interests. At the time, Massachusetts public schools had become a battleground between fundamentalist Christian groups that held Protestantization to be essential to the Americanization of the immigrant children then crowding American public schools. By granting tenure to public school teachers, the state legislature sought to ensure the secularization of public education. Most states subsequently granted their public school teachers tenure status, usually after a three-year probationary period, during which teacher contracts are renewed on a year-to-year basis, with no cause needed for nonrenewal. Tenure is often granted, as well, to nonteaching public school personnel, such as coaches, guidance counselors, assistant principals and principals.

Most public and private colleges and universities also grant tenure, usually after three to seven years. Tenure is seldom granted to nonteaching personnel, such as college presidents, who serve at the pleasure of the board of trustees, assistant presidents, deans of admission, and coaches, who are hired by and serve at the pleasure of the college president. At the higher education level, tenure dates back to the Middle Ages, when European universities were run by consortia of scholars, comparable to the partnerships that run modern law firms. When

admitted to such a group, a scholar was granted membership for life. United States higher education did not adopt tenure until the late 19th century, when Harvard sought to upgrade its instruction by replacing itinerant tutors with full-time professors. To lure two distinguished European professors to Harvard, the college offered them life positions rather than the three-year contracts that had hitherto been common.

Now a ubiquitous part of campus life, tenure in higher education has come under increasingly bitter attack since the beginning of the 21st century, as tenured professors command salaries approaching \$100,000 a year at some universities and absent themselves increasingly from classroom teaching duties to engage off-campus consulting work. As costs of tuition, room and board approach \$35,000 at some private colleges and universities, undergraduates find inexperienced TEACHING ASSISTANTS teaching as many as 40% of their courses instead of the tenured professors they (and their parents) thought their education dollars were buying.

In general, tenure is granted in two ways: as a reward to junior faculty who have successfully worked at a college for five to 10 years and as a means of luring an outside faculty member whose fame and work will bring prestige to the university. Defenders of tenure claim that it gives professors ultimate academic freedom to express minority views and pursue independent research without fear of reprisal or dismissal and that it entices scholars to forgo higher monetary rewards in private industry in favor of a campus life. Opponents of tenure respond by pointing out that academic freedom in the United States is protected by the constitutional right to free speech and also by the Fourteenth Amendment guarantee of due process, which protects professors against summary dismissal for expressing dissenting views.

Tenure proponents have become a diminishing minority since the passage of federal

and state laws prohibiting mandatory retirement solely on the basis of age. Such laws all but guarantee that tenured professors may continue working long after they are no longer productive and when they may actually have begun to hurt academic quality by blocking the entry of younger replacements. The result "is the fossilization of any given department," according to Chester Finn, an assistant secretary of education in the Reagan administration and later a tenured professor of education at Vanderbilt University. "You end up with people who haven't had an idea in 15 years. There is no room for energetic, fresh thinkers." Moreover, the freedom that tenure grants on campus, say critics, allows tenured professors to ignore teaching responsibilities in favor of research that will produce fame and royalty-producing books. Students complain that they never have access to tenured "superstars," whose salaries are underwritten by the very students being ignored.

Several studies support such contentions. The Carnegie Foundation for the Advancement of Teaching found that the average college teacher spent only 9.8 to 10.5 hours in class with students in the early 1990s, and this figure was inflated by the schedules of community college teachers who spent 15 to 16 hours a week in classrooms. At four-year colleges and universities, many faculty members have two or three days when they never enter the classroom. Most faculty said they spend only an hour a week preparing for each hour of teaching. In all, they acknowledged spending a total of only 20 hours a week on instruction and preparation, often using the same notes for several years. About 90% of faculty said they gave no more than eight hours a week to counseling students or attending meetings, and more than half gave less than four hours a week to those tasks. Even more damning, almost half the full-time faculties admitted spending no more than four hours a week on research

and scholarly writing, which is usually used as their excuse for not doing more teaching. Moreover, 45% of the entire professorial profession had not had any professional writing accepted or published during the previous two years.

A growing number of universities are responding to abuses of the tenure system by reducing the amount of tenure they grant and, instead, extending probationary periods for junior faculty and increasing the use of visiting lecturers, part-time or adjunct instructors and professors, and offering full-time professors limited-year, renewable contracts of five or 10 years. Although some newer colleges began their existence without ever offering faculty tenure, 56% of American university faculty were tenured in the mid-1990s, earning an average of \$65,000 to \$125,000 a year depending on ACADEMIC RANK, along with health insurance and commensurate pension provisions. Since then, most colleges and universities have allowed attrition to reduce the ranks of tenured faculty to only 51%, replacing them with part-time instructors and TEACHING ASSISTANTS (TAs), whose "stipends" range from \$8,000 to \$30,000, depending on the subjects they teach and the type of college. Moreover, only 21% of American colleges and universities provide TAs and their dependents with health insurance, and none provides TAs with any pension provisions.

Terman, Lewis (1877–1956) American professor of education and psychology, whose seminal work, *The Measurement of Intelligence* (1916), introduced the Stanford-Binet Test, the first widely used intelligence test, for which he developed the term "Intelligence Quotient," or "I.Q." Born and raised in Indiana, Terman earned his B.A. at Central Normal College, a teachers' college in Danville, Indiana, and at Indiana University. He taught in rural Indiana schools for two years, became a high school principal for three years and then enrolled at Clark University, in Worcester, Massachusetts, where he earned

his Ph.D. in 1905. He became a professor of psychology and pedagogy at the California State Normal School (later, University of California at Los Angeles) until 1910, when he joined the education faculty at Stanford University, where he also headed the psychology department until his retirement in 1942.

In addition to revising the SIMON-BINET SCALE and developing the STANFORD-BINET INTELLIGENCE TEST, Terman designed and pursued one of the most remarkable longitudinal studies in the history of the social sciences: a 30-year study of gifted children with I.Q.s above 140. Initiated in 1921 with 1,528 subjects aged three to 18, the study carefully detailed almost all aspects of their lives through college, graduate school and into the workplace. Four definitive works emerged from the study: *Genetic Studies in Genius* (with others, vol. 1 [1925], vol. 2 [1926], vol. 3 [1930]); *Mental and Physical Traits of a Thousand Gifted Children* (1925); *Gifted Child Grows Up* (coauthored with Melita H. Oden, 1946) and *The Gifted Child at Mid-Life* (with Melita H. Oden, published posthumously, 1959).

Prior to beginning his study, Terman had served on the U.S. Army Committee on the Classification of Personnel during World War I. When Congress passed the Selective Service Act of 1917, the Army found a startlingly high number of illiterate, though often skilled and otherwise intelligent, registrants. It asked Terman to develop intelligence tests to help place recruits in jobs appropriate to their intelligence and skills. He developed the ARMY ALPHA AND BETA TESTS—one requiring literacy, the other, a nonverbal test for the roughly 25% of recruits who were illiterate.

A pioneer in the introduction of health and hygiene into elementary school administrative concerns, Terman wrote *The Teacher's Health* in 1914; *Health Work in the Schools* (with E. B. Hoag) in 1914 and *The Hygiene of the School Child*, also in 1914. His other important

works included *Sex and Personality: Studies in Masculinity and Femininity* (with Catherine Cox Miles, 1936); *Measuring Intelligence* (with Maud Merrill, 1937) and *Marital Happiness* (1938).

test battery A type of examination made up of several subsections, each of which measures a different type of knowledge and skill, or aptitude. The SCHOLASTIC ASSESSMENT TEST I, used by many colleges as an entrance examination, is a test battery consisting of a verbal sub-test, to measure reading and writing skills, and a mathematics sub-test, to measure computational skills. The score of a test battery may be reported as a composite score, as individual scores for each sub-test, or both.

testing out An evaluation process whereby students may omit a course or move from a lower-level course to a more advanced course and continue to advance at whatever pace their abilities permit. Many gifted students are often able to graduate from high school or college a year earlier than they ordinarily would by testing out of lower-level courses. Through a variety of SCHOOL-COLLEGE PARTNERSHIPS, thousands of gifted high school students can take college-level courses at their own high schools or at nearby colleges, while remaining to graduate with their high school classmates. They nevertheless earn college credits that permit them to skip lower-level courses when they enroll at college. The College Board's ADVANCED PLACEMENT COURSES and examinations for high school students are a comparable program, often allowing students with high scores to bypass freshman-level college courses and enroll immediately into advanced college work.

testing preschoolers A highly controversial practice that uses standardized, nonverbal examinations to determine the readiness of a preschooler to enter kindergarten. The widely used GESELL SCHOOL READINESS SCREENING TEST

asks kindergarten applicants to copy a series of geometric shapes freehand. Although 97% of 4 1/2-year-old girls and 92% of same-age boys can draw a figure that resembles a circle, only 35% of the girls and 25% of the boys can produce a well-proportioned circle. The square is more difficult, with only 65% of girls and 60% of boys able to draw a figure that appears to be a square, and only 15% of girls and 5% of boys able to draw a well-proportioned square. Vertical and horizontal diamonds are virtually impossible for 98% of pre-kindergarten children to copy in recognizable form.

A second element of the Gesell test is the Incomplete Man, a round-headed stick figure with missing body parts—both eyes, one ear, half his hair, one arm and one leg. The test measures how well a student completes the figure. A kindergarten-ready girl should add a few hairs by the time she is four years old; boys, when they are 4 1/2. Most children add the missing ear by the time they are three, but placement is erratic until they are five. Some 70% of three-year-old girls and 55% of three-year-old boys add the missing arm, and 75% of three-year-old girls and 62% of the boys add the missing leg. Although placement and length of the added limbs are erratic at age three, they should meet the body line by the time the children are of kindergarten age.

Critics of the Gesell test and comparable examinations maintain that such evaluations are invalid. Often administered by untrained kindergarten administrators, they can produce widely varying results for the same child on different days, depending on the child's mood. Moreover, rates of development of preschoolers are so rapid, in comparison, say, with high school seniors, that a test given several weeks before a child-applicant's prospective entry into kindergarten can show very different results when kindergarten opens. In the meantime, a poor score several weeks earlier may well have left the child rejected by the kinder-

garten and forced to wait another year before gaining admission. In contrast, a high school senior's college admission test scores seldom change more than one percentage point or two over a six-month period.

Thus, say critics, the use of kindergarten admission tests is not only invalid but also grossly unfair. Moreover, the tests are certifiably biased against poor and minority children with less access to visual experiences and instructional playthings such as drawing boards and coloring books that help develop the very skills measured by the tests. As such, the tests are educationally destructive by denying kindergarten admission to many children who most need the skill-training that kindergarten provides. Still another criticism leveled at such testing concerns the deep anxieties and possible emotional trauma it can produce in impressionable youngsters, who readily feel and internalize the exaggerated parental hopes for their success.

Test of English as a Foreign Language (TOEFL) A standardized examination to evaluate English-language skills of students whose native tongue is other than English. Routinely used to evaluate foreign students applying for admission to colleges and universities in the United States, TOEFL is a test battery, with six subtests that measure listening skills, comprehension skills, knowledge of English language structure and syntax, reading comprehension and writing skills.

tests In education, any of a wide variety of instruments designed to evaluate a student's aptitudes, skills, knowledge or intelligence. Tests may be oral, written or computer-based, objective or subjective and norm-referenced, criterion-referenced or student-referenced. Norm-based tests compare the student's scores to the average scores for other comparable students, criterion-based tests compare the stu-

dent's score to the scores that the teacher or school had expected and student-based tests compare the student's most recent score with his or her score at the beginning of the instructional unit.

The origin of tests in the schools of the Western world lies in the catechism, a manual of Roman Catholic doctrine, drawn up in question-and-answer form and used for religious instruction of the young since the first such manual was compiled by the English scholar Alcuin in the eighth century. Although many similar catechisms followed, they did not grow into universal importance in the Christian world until Martin Luther stressed the importance of instructing the young and published his own primer, *A Brief Explanation of the Ten Commandments, the Creed, and the Lord's Prayer*, in 1520. Although largely taught at home, the catechism entered the classroom in the early colonies, as churchmen were charged with secular, as well as religious, instruction of the young. Catechetical testing in secular subjects was a logical extension of the approach to religious training.

A routine element of school life ever since, tests have never been totally free of insoluble controversies. Can a single test truly determine a youngster's accumulated knowledge? Can a teacher grade a subjective test objectively? How does individual student anxiety affect test scores and how can scoring be adjusted to avoid any student-to-student scoring differences due solely to anxiety and not to lack of knowledge, skills or intelligence? A host of arguments—and attempts at solutions—have been developed for each of these and many other questions about testing. One of the most recent innovations is the development of student PORTFOLIOS as a primary means of evaluating student achievement, thus relegating test scores to but one factor of many in an overall evaluation of a student's entire work for a specific period. To address the problem of student

anxiety, many secondary schools require students to take minicourses in test-taking. Moreover, many objective tests penalize students for wrong answers to discourage random guessing by aggressive, “testwise” (see “TESTWISENESS”) test-takers with inadequate knowledge of the subject on which they are being tested.

In addition to serving as an evaluative tool for teachers, traditional classroom testing serves as a classic application of LEARNING THEORY. The prospect of a test (or the fear of occasional unannounced surprise, or “pop,” quizzes) is, in theory, a stimulus to study and the development of regular study habits, while the eventual test grades serve as either a reward or punishment for careful or careless preparation—and a valuable indication to the student of his or her strengths and inadequacies. Most schools begin some testing in the early elementary years. As students progress to the later elementary and middle school years, the frequency of testing increases, along with its weight as an evaluative instrument. Test routines vary widely, depending on the teacher’s inclination and sense of the class. One classic routine, designed to encourage daily study, includes daily 10-minute quizzes on the previous day’s class work and overnight homework, capped by a longer 30-minute or full-period test at the end of the learning unit and full-period final examination at the end of the quarter or semester. Other teachers prefer once-a-week testing, while still others rely on the surprise “pop” quiz, which encourages students to develop daily study habits because of the possibility of being tested at any time without warning.

A multitude of test formats range from the objective test, with its multiple-choice and true-false questions, to the essay-style subjective test. The former yields only a single right or wrong answer for each question, while the latter requires substantial argumentation and logical discussion that is important less for its “rightness” or “wrongness” than for its exposi-

tion of the degree of student familiarity with the subject matter and, therefore, the effort the student invested in study and preparation for the examination.

The passage of the NO CHILD LEFT BEHIND ACT OF 2001 unleashed a vast expansion of the testing industry by forcing states to spend nearly \$5 billion to measure the academic proficiency and educational progress of all public school students every two years. Nine companies are sharing about 87% of the benefits of the federal testing program, four of which capture about 64%: CTB/McGraw-Hill with contracts in 23 states, Harcourt Assessment with contracts in 18, Pearson with contracts in 13, and Riverside Publishing with contracts in 12 states.

(See also ACHIEVEMENT TESTS.)

Tests in Print The definitive and most complete bibliography of commercially available tests, test reviews and data on specific tests, published annually by the Buros Institute of Mental Measurements, along with the equally definitive, biennial *Mental Measurements Yearbook*. Developed and for years edited by the late Oscar Krisen Buros, *Tests in Print* was first published in 1961 as a guide and index to the first five editions of *The Mental Measurements Yearbook*. Current editions include bibliographies of all known tests for English-speaking people; an index for *The Mental Measurements Yearbook*, which contains critical reviews of tests; descriptions of the construction, use and validity of each test; a list of tests that have gone out of print and a directory of test publishers, with extensive cross-indexing to make the work an easy-to-use directory for teachers, administrators and other educators.

“testwiseness” A colloquialism referring to skills and instincts that can often give one student an advantage in a test over other students with identical intelligence and knowledge but

lacking test-taking skills. Many of these skills can be learned. At the simplest level, a cursory study of the meanings of basic prefixes and suffixes, for example, can provide a student with the ability to guess the meanings of many words in vocabulary tests. Training in mathematical estimation can also improve “testwiseness.” Teachers can also help students develop testwiseness by *TEACHING THE TEST*—focusing instruction on areas the teacher plans to test extensively or, in the case of commercially prepared standardized tests, focusing on topics and types of questions that such tests have usually stressed in the past.

Instinctual testwiseness is difficult to acquire. In general, educational psychologists have found two broad-based student responses to normal test anxieties: aggressive risk-taking and cautious, passive withdrawal from risks. The aggressive response is characterized by assertive guessing, even when the student has no idea of the answer; the cautious student responds to anxiety by refusing to risk a guess to questions whose answers he or she does not know. Given two equally knowledgeable and intelligent students, the risk-taker will normally produce higher test scores.

Texas The 28th state to join the Union, in 1845. The Spaniards explored Texas shortly after the Columbus voyages and more extensively in the late 1530s. A French explorer, however, claimed Texas for France in 1684; to counter the claim and to Christianize the native Indians, the Spanish founded missions in east Texas in 1690, establishing the first educative institutions of the region. Although officially a province of Spain, Texas remained sparsely settled borderland into the 19th century, with only one genuine school, founded in 1746 in the settlement of San Antonio. By 1820, on the eve of Mexican independence and almost 300 years after the first Spanish explorations, there were only about 2,000 settlers in Texas, but the

area developed rapidly under Mexican rule, luring more than 24,000 Anglo-Americans, including 4,000 slaves. In 1839, three years after Texas became an independent nation, it organized a public school system, with each county receiving lands to be used for schools. It was not until after the Civil War that a new state constitution called for establishment of free public schools for all children. The state has more than 7,500 public elementary and secondary schools with a total enrollment of nearly 4.2 million—59% of them minority children and more than 20% of them living in poverty. Student academic proficiency has improved dramatically in the past decade from the bottom one-third of the nation to slightly above the national average in all disciplines and, in the case of fourth graders, well above the national average in mathematics proficiency—13th among the states in 2005.

The state has more than 200 institutions of higher education—42 public four-year 69 public two-year institutions and 61 private four-year and 36 private two-year institutions. The state’s University of Texas system has four four-year campuses and an endowment of nearly \$12 billion, the largest endowment of any public university in the world—largely accumulated through huge, efficient fund-raising arms that supplement revenues from state appropriations. Similarly, the state’s Texas A&M University land-grant system has five four-year campuses and an endowment of about \$4.5 billion—the third-largest endowment among public universities. The state’s other public colleges include two historically black institutions, Prairie View A&M (part of the Texas A&M land-grant system) and Texas Southern universities. Among the state’s notable private institutions are Southern Methodist, Texas Christian, Baylor and Rice universities. Total undergraduate enrollment in Texas is more than 1 million, and the graduation rate for the more than 600,000 students in four-year colleges is 48.7%.

textbook Any bound volume of didactic literature that presents the principles of a subject and is deemed relevant to the study of that subject. Usually associated with books required in school, textbooks date from the organization of the earliest universities in Europe in the Middle Ages, where scriptural texts served as textbooks. As knowledge expanded and the works of ancient Greek scholars were rediscovered, the range of textbooks expanded to include manuals on medicine, law, politics, surveying, agriculture and conduct. To these were added works of poetry, drama, history and even fiction in the centuries that followed. At the primary and secondary school level, individual teachers and priests who served as teachers generally devised their own primers and early readers for children. As advances in printing permitted increased production of such books, standard versions of primers could be distributed to an ever increasing number of classrooms.

It was Isaiah Thomas who first recognized the potential of a captive "mass market" in education after the Revolution, and he became the first modern textbook publisher in the United States, producing textbooks for schools throughout New England. With an eye for high standards, Thomas recognized the superiority of NOAH WEBSTER's speller and grammar, Nicholas Pike's arithmetic, and works of literature appropriate for schoolchildren. Thomas launched what became a golden age of publishing, with education at its core. Of 2.5 million books printed in 1820, 750,000 were schoolbooks. The industry total climbed to 3.5 million in 1830, with schoolbooks accounting for 1.1 million; to 5.5 million in 1840, with schoolbooks accounting for 2.6 million; and to 12.5 million in 1850, with schoolbooks accounting for 5.5 million. Education had become the heart of publishing and publishing the heart of education.

SAMUEL GRISWOLD GOODRICH replaced Thomas as the leading American textbook pub-

lisher, dominating the field from 1816 until his death in 1860. Goodrich published myriad textbooks and children's works, including the Peter Parley books and a series of anthologies for children. Like the printers of earlier times, Goodrich authored many of the books he printed, commissioned others and reprinted popular British and European works.

Although they had started as conventional publishers of fictional and nonfictional works, the brothers James, John, Wesley and Fletcher Harper eventually borrowed a then-popular British publishing practice of producing series called "libraries." Recognizing that a lack of public schools and child labor practices had produced a generation of illiterate Americans, the Harper brothers fed an unquenchable, national thirst for education by producing the Family Library (187 titles), the Classical Library (37 titles), the Library of Select Novels (36 titles), the Boy's and Girl's Library (32 titles), the Theological Library (9 titles), the Dramatic Library (5 titles) and the School District Library, which fed schools six different series with a total of 295 titles. In effect, they established educational curricula for homes, libraries, churches and schools, and they educated hundreds of thousands of Americans, bringing them the works of Bacon, Locke, Paine and other philosophers, along with works of history, biography, science and literature.

The academic value of textbooks varies widely according to the individual book, the author, the publisher, its use in the classroom, the instructor and those who select it. In many college courses, students are expected to study textbooks independently, as a complementary element of the professor's lecture. In other courses, the materials in the textbook are integrated with oral instruction. At the secondary school level, teacher classroom presentations are usually integrated with textbook materials. Some teachers, however, have a tendency to skip sections about which they have little

knowledge. Indeed, the textbook is selected as often for the indoctrination of students as it is for their edification.

There are few textbooks that can be called unbiased, even in the empirical sciences and mathematics; authors invariably belong to one school of thought or another and seldom present all schools of thought in a balanced way. Most textbooks are designed to obtain maximum sales in as many school districts as possible across the United States. The result is often a product that skirts all controversies and is therefore a bland, uninteresting and, in effect, uninformative product. Many schools, school districts and states limit the use of textbooks to those that either omit or have been cleansed of political, sexual and religious references deemed by authorities to be unacceptable for young minds. Thus, new, rewritten versions of Shakespeare's plays, including *Romeo and Juliet*, are often published with no erotic references. Even more insidious has been the introduction in many school systems of pseudo-textbooks that purvey utter falsehoods in science, social studies, history and other courses. Some teach so-called creation science, others invent civilizations that never existed in black Africa, still others present theories of racial superiority, and still more deny the existence of historical events such as the Holocaust.

Recent, technological advances have revolutionized textbook publishing, as publishers began issuing tens of millions of pages of text on DVDs (digital video [and/or versatile] discs), each of which can hold more than 1 million pages of text and images from books. A single DVD can hold the entire curriculum—300 pounds of textbooks, manuals and lecture slides—of the standard four-year dental school program. Although costs—about \$6,000—do not differ substantially from those of four years' worth of actual printed textbooks, the DVD is far more practical and useful. In addition to portability, each disc can hold several hundred

thousand images, including diagrams, microscope images, charts, photographs and illustrations that often cannot be reproduced in the limited space of printed texts. Moreover, the dental school DVD includes about 20 hours of video, including demonstrations of actual dental techniques that can only be described—but not demonstrated—in a printed text. Although full-curriculum DVDs such as the dental-school program remain costly because they incorporate lectures, slides and laboratory demonstrations, most publishers are producing digital versions of standard textbooks—"e-textbooks"—at half the price of hard-copy tomes. McGraw-Hill has been producing electronic versions of its best-selling textbooks since 2000 and, on request from professors of well-attended courses, producing customized electronic textbooks for specific courses, combining lectures, articles and chapters of specific books into a single e-text. Thomson Higher Education offers e-textbooks under the Advantage Series imprint at half the price of paper versions, as does Pearson, with its Safari-X imprint, and Houghton Mifflin. Online textbooks combine the advantages of books with search engines that can extract data and course-management software to highlight and organize materials, produce outlines or piece together essays. Some, but not all, can be downloaded in their entirety into hard-copy format. College bookstores usually offer electronic textbooks at two-thirds the price of hard-copy versions.

Another advantage of the DVD is the ability to update it periodically over the Internet. By the time most paper textbooks actually go on sale in bookstores, the information they contain may already be five years old and out of date. The advent of DVD and digital e-textbooks not only eliminated the need to buy entire new (and costly) editions of old texts, it also obviates the need for publishers to issue costly revisions of standard texts whose authors may well have died since the

previous edition was published. With nearly 80% of universities offering some DISTANCE-LEARNING courses, the DVD and digital books simplified acquisition of textbook materials for students in isolated areas without college bookshops.

Although the DVD has simplified and modernized the textbook publishing process and assured issuance of more up-to-date materials, it has not narrowed the wide variations in the academic value of textbooks—especially those outside the empirical sciences, where authors and publishers can manipulate content and interpretation to conform with the demands of teachers, school administrators, school boards and others who select the texts they present to students.

(See also PUBLISHING.)

T-Group A small training group organized to explore interpersonal and intrapersonal relations by learning about group members, how they affect others and how they might interact more effectively with others. A form of group therapy, T-Groups are often called sensitivity training, which is used in schools to help students learn about and overcome racial, religious, gender and other forms of prejudice.

Thayer, Sylvanus (1785–1872) Military leader, educator and “father” of West Point and modern military education. Born in Massachusetts, he graduated from Dartmouth College in 1807 and, after only a year, from West Point as well. After serving with the Corps of Engineers building fortifications along the New York and New England coasts for the War of 1812, he was assigned to tour Europe to study military education and compile a library of about 1,000 books and supplies for West Point. In 1817, he was appointed superintendent of West Point, with a mandate to change the institution from an ineffective, second-rate school into an effective, respected institution.

Borrowing much from the French model at the Ecole Polytechnique, he immediately raised academic standards and methods of assessing student achievement and broadened and strengthened the engineering and scientific curriculum. In addition, he broadened the general curriculum, adding chemistry, general history, moral philosophy, law, geography and ethics. He attracted the finest faculty available, both military and nonmilitary, and soon built the school into an outstanding academic, technical and scientific institution and the world’s premier engineering school. In 1824, RENSSELAER INSTITUTE used the West Point model to establish the first civilian engineering college; in the decades that followed other colleges such as Harvard and Yale established engineering departments along similar lines.

During his 16-year tenure, Thayer also introduced what remains today’s strict academic and physical discipline at “the Point.” Classes were small, averaging 10 to 14 students, with each student required to take each subject and to participate in each class. He instituted tough examinations, rigid military discipline and a code of honor. In 1818, students rebelled against his harsh ways. He court-martialed and dismissed five ringleaders. His unyielding discipline provoked another student revolt on Christmas Day, 1826, and rioting broke out on the campus. The bitterness between the cadets and Thayer intensified until 1833, when President Andrew Jackson reinstated several cadets that Thayer had ordered dismissed. Thayer resigned and spent the next 30 years as chief army engineer in charge of New England coastal fortifications and harbor improvements. He retired in 1863 and in 1867 endowed the Thayer School of Engineering at Dartmouth College.

thematic teaching An instructional approach that focuses on the study of a particular theme or topic, but indirectly forces students

to study elements from a variety of traditional academic and scientific courses. Used at all levels of instruction, thematic teaching is akin to TEAM TEACHING, whereby instructors in different disciplines coordinate the materials they teach each week to promote interdisciplinary studies. Thematic teaching is based on the same principle, with an ostensibly non-academic rather than academic theme used as the centrality around which students will amass applicable elements from as many academic and scientific courses as they can. Thus, thematic teaching might select “love” as a topic for study. Depending on the age group, the theme would provoke student forays into psychology, sociology, biology and zoology, physiology, literature, music and art—at the very least. Team teaching, on the other hand, selects a more finite academic or scientific topic—the study of the ancient Egyptian pyramids in history class, for example—and then obtains cooperation from all other teachers instructing the same grade to use the pyramids as a springboard for instruction in geometry, art history and language arts.

theology The study of God, God’s relationship to the world and to humans, along with people’s relationship to God and concomitant religious faiths, practices and experiences. Originally the core of higher education in the American colonies, today’s theological education is unlike any other professional education in the United States, because the sheer number of different religions and religious sects mitigates against any set of universal standards of professionalism. Theology is a relatively minor course of study in today’s overwhelmingly secular undergraduate four-year colleges. Even many Protestant-affiliated colleges, which dominated American higher education in the 18th and 19th centuries, often relegate theology to graduate school work, usually for students preparing for service in the ministry.

Roman Catholic educational institutions, on the other hand, usually integrate theology into the academic curriculum from kindergarten through secondary school and college. Students bound for the priesthood normally attend post-secondary or post-college seminaries. Theology studies for Orthodox Jews begin in the earliest elementary grades, with rabbinical studies beginning in secondary school and continuing through college. Jews bound for the Conservative and Reform rabbinate usually attend conventional, secular schools and colleges, before beginning their rabbinical studies at the graduate school level at either the Jewish Theological Seminary (Conservative) (see SOLOMON SCHECHTER) or HEBREW UNION COLLEGE—JEWISH INSTITUTE OF RELIGION (Reform).

Theology’s roots reach back to ancient Greece and the Greek philosophers who invented the word *theology*, literally, the study of God. Greek pantheistic theology was a rational approach to God, based on the mythology of the Greek poets who told of continuing appearances of the gods on Earth, to interact with humans. The Greek rational approach spawned the Christian theological approach of revelation as the source of theological truth. The role of Scripture, or sacred writings, appeared first with Judaism, then with Christianity. Usually accepted as revelatory works by the founders of the religion or as told by the founders to scribes or disciples, Scripture has emerged as a source of deep divisions in virtually every Western religious sect. In broadest terms, conservative Christian fundamentalists and Orthodox Jews view Scripture and sacred texts as the divinely inspired, infallible word of God, while liberals and reformers view religious texts as fallible, human assumptions and attestations of revelation, but not actual revelation. The split between the two camps grows even wider when scriptural passages are unclear and require human interpretation. The latter can vary so widely as to provoke endless divisions

between members of virtually every sect, Christian and non-Christian alike.

Theology was the basis of all curricula when the first universities were founded in the Middle Ages. The thrust of theological thinking traveled from the concrete to the conceptual, accepting God as concrete and proceeding to define God in conceptual terms for the student to understand, using analogies, symbols and metaphors as vehicles for such understanding. The 13th-century Italian St. Thomas Aquinas and the 20th-century Swiss Karl Barth both insisted on the study of theology as a science that required the use of orderly, critically intellectual procedures to study God. Both agreed that, unlike objects of study in science, the object of their study—i.e., God—is not accessible to empirical study. They start from different points of view, however, with Aquinas asking whether God exists and setting out to prove it, while Barth begins with the assumption that revelation proves the existence of a self-communicating God. Barth's studies aim at determining the interrelationship between humans and God.

There is, however, no single, universal methodology in theology, and the prevailing methodology changed dramatically throughout the Middle Ages, the Renaissance and, finally, the Reformation, when the study of theology was most extensive. Luther extended theological studies to the beginning reader, publishing specific texts and a primer for youngsters, *A Brief Explanation of the Ten Commandments, the Creed, and the Lord's Prayer*, in 1520. John Calvin's published texts introduced an unquestioned sovereignty of God and the doctrine of predestination, whereby God had picked out each person's station in life.

CALVINISM became the basis of the curriculum at HARVARD COLLEGE, when it was founded in 1636 as a school to prepare ministers—the first college in the colonies. Although organized around the traditional trivium (gram-

mar, rhetoric and logic) and quadrivium (arithmetic, music, geometry and astronomy), the entire thrust centered on theology, with several hours a week devoted to Greek, Latin and Hebrew studies of divinity. Theological studies began losing sway in the academic community from the beginning of the 18th century and with the growth of the empirical sciences and the beginning of the industrial revolution. By the middle of the 18th century, Benjamin Franklin had opened an academy in Philadelphia (later known as the COLLEGE OF PHILADELPHIA and eventually as the University of Pennsylvania) that totally omitted theology as a course of study, replacing it with mechanics, arithmetics, agriculture, commerce and other practical courses that he believed were more needed than theology to build and expand a new nation. Thomas Jefferson followed Franklin's example in founding the University of Virginia early in the 19th century. Again, not a course in religion could be found in the curriculum. By the mid-20th century, theology had all but disappeared from the undergraduate curricula of most liberal arts and science colleges. Colleges that continued to offer theology simply included it in their curricula as a subject with no greater status than any other liberal arts subject. In some areas of the country, Christian fundamentalists responded to the secularization of traditional colleges by opening bible colleges that taught nothing but theological and divinity courses.

In 1883, Harvard president Charles Eliot upgraded theological training for traditional Protestant Christian churches to the professional level by creating a three-year graduate school program, comparable to professional training for law and medicine. In so doing, he established as a prerequisite for admission the successful completion of a rigorous undergraduate predivinity program, comparable to undergraduate premedical studies required for admission to medical school. Predivinity stud-

ies included Greek, Latin and Hebrew, to permit study of Scripture in the languages in which it was originally written or translated. In addition, predivinity students were required to take courses in English literature, psychology, political science, history, German (to study Luther) and the natural sciences.

Once admitted to the Harvard Divinity School, future ministers were required to take courses in Semitic studies, New Testament criticism and exegesis, ecclesiastical history, comparative religion, psychology, ethics, philosophy of religion, systematic theology and homiletics, and engage in practical work in "charitable and reformatory methods, and the contest of Christian society with licentiousness, intemperance, pauperism, and crime." With some variations, this blend of scholarship and ministry remained the basic approach to theological studies at Harvard and other comparable institutions for the next century.

Theory X and Theory Y and Theory Z

Three of many new approaches to education that have emerged from the observations of individual theoreticians. Often based on personal insights rather than costly, tightly controlled longitudinal studies, such theories frequently ring true in enough minds to become virtual education cults. Theory X and Theory Y can really be thought of as one theory that dichotomizes students (indeed, all humanity) into Theory X types, who dislike work, prefer direction and can perform only under tight control of superior authorities, and Theory Y types, who find physical and mental work as satisfying as play and willingly exercise self-direction once committed to a goal, if promised adequate ego-satisfaction/gratification and rewards. Theory Y types are the better able to learn and accept responsibility and display creativity and ingenuity.

Theory Z, which originated in Japan, ignores the personality characteristics of Theo-

ries X and Y and simply introduces effective technological equipment to transform every student, A through Z, into one capable of achieving his or her potential.

therapeutic school Any of the approximately 300 day schools, boarding schools and camps that offer psychological and behavioral therapy along with as standard a program of academics and physical education as the children can tolerate. Usually designed for adolescents, therapeutic schools enroll more than 100,000 teenagers diagnosed with a wide variety of behavioral dysfunctions, including ATTENTION DEFICIT DISORDER, DRUG ABUSE, minor criminal behavior, running away from home, LEARNING DISABILITIES, obesity and other psychological problems. Some schools specialize in victims of physical or sexual abuse. Most therapeutic schools belong to profit-making corporations charging upward of \$400 a day.

thinking A vague, all-encompassing term usually summed up colloquially as "using one's brain." In education, the term generally refers to higher-level processes emanating from the brain and providing such phenomena as memory, imagination and ability to solve problems. Until the 1970s, few schools taught students how to think. What they concentrated on was teaching students to memorize facts, but not necessarily how to use the arsenal of facts thus accumulated to solve problems. Such higher-order thinking skills and how to teach them became the new goal for American education. They cannot be taught (although they may be implied) through haphazard, conventional, day-to-day teaching that simply plods through the curriculum. Educators agree that learning skills can and must be taught as part of an essential element of the curriculum of every class, from kindergarten through the college years.

Many children acquire higher-order thinking skills intuitively or by imitation. The systematic approach now used in elementary schools to assure maximum development of higher-order thinking skills is to help the child identify the problem clearly by discarding all extraneous materials presented as part of the problem but actually unrelated to its heart. The next step is a memory search for solutions used for comparable problems, the evaluation of each and the implementation of the most likely. Even if the student does not arrive at the correct or best solution with the first effort, the key to teaching critical thinking is not a summary rejection of a wrong answer, as in "That's wrong! Anyone else with an idea?" To teach critical thinking, the child with a wrong answer must be helped to step backward, examine the reasons for choosing that solution and the reasons for not choosing alternatives and eventually, point by point, discover why one solution has more advantages than the alternatives. Then, having found the solution, the student must be taught immediately to generalize by exploring similar problems for which the same solution might be valid—and problems for which the incorrect solutions might have proved correct. Teaching thinking, in other words, requires a vast exploratory effort and enormous teacher patience.

There are many successful, systematic programs for teaching thinking skills, among them "Philosophy for Children" and "Instrumental Enrichment." The former was developed at Montclair (New Jersey) State College, using specially written short novels as a basis for extensive student discussion. Students learn to recognize irrelevant questions; to avoid jumping to conclusions; to employ analogy and syllogism in reasoning; to discover underlying assumptions; to detect ambiguities; to discover contradictory statements and to discover causal relations.

"Philosophy for Children" tests thinking skills of elementary school students with questions such as the following:

1. If it's true that only animals are cats, then it's also true that:
 - (a) all cats are animals
 - (b) all animals are cats
 - (c) neither of the above
 (The correct answer, "a," tests the ability to sort out statements of inclusion and exclusion.)
2. Glenn said, "Here comes a police car racing down the highway. There must be an accident." Glenn is assuming that:
 - (a) when police cars speed along the highway, it's usually to chase criminals
 - (b) when police cars speed along the highway, it's to get to an accident
 - (c) when there's been an accident, police cars speed along the highway
 (The correct answer, "b," tests the ability to find underlying assumptions.)
3. All cats that cry are in pain. All cats are suffering creatures. Therefore:
 - (a) all suffering creatures are cats that cry
 - (b) all cats in pain are cats that cry
 - (c) all cats that cry are suffering creatures
 (The correct answer, "c," tests syllogistic reasoning ability.)

The teaching of reasoning skills does not, however, require formal programs such as "Philosophy for Children." Many teachers are intuitively skilled in performing the job as they progress through the standard curriculum. There are six keys to teaching thinking skills: the use of questioning to provoke profound thinking rather than short answers; introduction of student-centered learning that encourages students to pursue knowledge on their own instead of relying on lectures and teacher answers; use of essay questions that require thoughtful answers rather than the memory responses of short-answer tests; extensive writing assignments, in and out of class, based on lessons, independent

observations and thoughtful questions; discussions of strategies for problem solving and teacher display and instruction of how he or she goes about solving particular problems.

The College Board lists five reasoning skills it considers essential for higher education: the ability to identify and formulate problems and propose and evaluate solutions; the ability to recognize and use inductive and deductive reasoning and to recognize fallacies in other forms; the ability to reach and defend conclusions from written, oral, tabular or graphic data; the ability to comprehend, develop and use concepts and generalizations; and the ability to distinguish between fact and opinion. To achieve these skills requires enormous educational groundwork in elementary and secondary schools, usually laid down through carefully planned programs rather than by allowing these skills to develop on a catch-as-catch-can basis in traditional day-to-day teaching.

Third Plenary Council of Baltimore An 1884 convention of Roman Catholic leaders in the United States to establish a unified system of education for Roman Catholic children. At the time, Catholic leaders were facing threats to the future of their church. On the one hand, divisions were arising among loyal congregants with different ethnic backgrounds who sought priests who spoke their own language. German Catholics wanted German priests; Irish Catholics, Irish priests; Polish Catholics, Polish priests. The higher Catholic leadership sought to build an American Catholic Church based on unity among all these groups and had purposely assigned priests to preach to congregations of ethnic backgrounds different from their own.

Meanwhile, another threat to church survival emerged from the public school systems, which absorbed Catholic children and promptly sought to Protestantize as well as Americanize them. The answer to both threats, the Catholic hierarchy concluded, was the creation of its

own, independent school system, with a parochial elementary school at each parish, a high school in each diocese and, atop the entire structure, the Catholic University of America. All were to teach Americanism, using the English language to prepare subsequent generations of Roman Catholic Americans for places of leadership in the nation and in its communities.

Thomas, Isaiah (1749–1831) American patriot, printer and “father” of modern American publishing. Born in Boston to ne’er-do-wells, he was apprenticed to a Boston printer after only six weeks of formal schooling. Released from his indenture, he traveled abroad but returned to Boston in 1770 to form a partnership with his former master. Together they published a Whig newspaper, the *Massachusetts Spy*. After becoming sole owner, Thomas took up the patriot cause, becoming a hero among the patriots but anathema to the British, who forced him to flee Boston in 1775. He set up shop in Worcester, became the official patriot printer and resumed issuing the *Spy*. By then, the paper had gained a far-reaching reputation and produced enough income for Thomas to expand his publishing business to include magazines, almanacs and, eventually, books. By 1790, he had opened offices throughout Massachusetts and employed about 150 workers in his Worcester facility alone.

Recognizing the value of mass sales, Thomas was among the first to produce Bibles and take advantage of mass circulation through his chain of offices throughout the state. Thomas was also first to recognize the potential of a “mass market” in education after the Revolution, and he began producing textbooks for schools throughout New England. Rather than publishing any available primers or dictionaries, he sought out superior products and quickly obtained the rights to publish NOAH WEBSTER’s speller and grammar, Nicholas Pike’s arithmetic, and works of literature appropriate

for schoolchildren, such as *Goody Two-Shoes*, *Mother Goose* and *Robinson Crusoe*. The consummate publisher, Thomas had a gift for selecting books of quality as well as salability. In 1789, he decided to publish *The Power of Sympathy*, by William H. Brown, the first novel by a Native American ever published in the United States. An author himself, he compiled the two-volume *Printing in America* in 1810, a work that remained the definitive shop manual to the trade for more than a century. In 1812, he founded and became first president of the American Antiquarian Society.



Edward L. Thorndike (Library of Congress)

Thorndike, Edward Lee (1874–1949)

American psychologist, educator and “the father of educational psychology.” Born in Massachusetts and educated, successively, at Wesleyan, Harvard and Columbia Universities, Thorndike taught psychology at Teachers College, Columbia University from 1899 until 1940 and developed a host of refined intelligence tests to measure aptitudes in arithmetic, handwriting, spelling, drawing, reading and language skills.

A confirmed Darwinian, Thorndike sought to expand the use of the nascent Binet and Simon intelligence scales to convert education into a pure science. By measuring the intelligence, aptitude and achievement levels of each student, Thorndike developed tests as educational diagnostic tools with which to sort students into ability groups whose instruction could be tailored to their needs. Although considered progressive at the time, sorting, or TRACKING, as it’s now called, deteriorated into one of the more regressive educational trends in modern education. What Thorndike failed to consider was the differences in rates of childhood development that might allow a slower five-year-old to leap ahead of his or her peers the following year. Instead of providing the less skilled with remediation that could raise their skill levels, sorting trapped them in their relatively low educational stations, often condemning them to lives of educational deprivation and consequent economic hardship.

Despite the failure of his sorting theories, Thorndike nevertheless made enormous contributions to education and educational psychology. His development of such standard testing devices as the maze, the puzzle box and various signal-and-choice mechanisms laid the groundwork for investigation of animal learning and, in turn, human learning. He conducted some of the earliest experiments on the influence of inheritance on intellectual functioning and character. He also used intelligence

testing to study and develop practical teaching techniques for enhancing memory, rates of learning, adult learning and conditions of efficient learning. Many of these studies formed the basis of his seminal three-volume *Educational Psychology* (1913–14), the work that created the science of educational psychology. Author of more than 500 articles and books, he made several important contributions to elementary and secondary education by authoring *The Teacher's Word Book of 30,000 Words* (1921), *The Thorndike Century Junior Dictionary* (1935) and *The Thorndike Century Senior Dictionary* (1941). The first two works were unique for their era in that they were designed from their inception for youngsters rather than representing a simplification of adult books.

TIAA/CREF The Teachers Insurance and Annuity Association/College Retirement Equities Fund, which provide pensions and retirement benefits for employees of colleges, universities, independent private schools and a number of other educational institutions. Although now closely associated, TIAA (1918) and CREF (1952) began as (and, technically, remain) separate, nonprofit annuity companies. Founded by the Carnegie Foundation for the Advancement of Teaching. TIAA relies on a combination of employee and employer contributions to fund its investments, which are largely limited to mortgages, bonds and other fixed-income securities. Income from investments is paid out in fixed-dollar life pensions, based on a percentage of the retiree's former salary. In contrast, CREF is a mutual fund, with a broadly diversified portfolio of common stocks designed to protect TIAA fixed-income pensions from the effects of inflation. In addition, TIAA-CREF is a financial services provider, offering life insurance, COLLEGE-SAVINGS PLANS, IRAs, after-tax annuities, and Keogh retirement-savings plans for the self-employed. Like most mutual funds, CREF sells shares, or units, to

the general public, as well as TIAA members. Together, TIAA/CREF has more than \$360 billion in assets, generating annual revenues of about \$40 billion for 3.2 million customers.

Ticknor, George (1791–1871) American educator and originator of departmental curricular organization. Born in Boston, Ticknor was a child prodigy, passing the entrance examination at Dartmouth College at the age of nine, enrolling in the junior class at the age of 14 and graduating two years later. He went on to study Greek, Latin and the law, which he practiced briefly in 1813 and 1814. After extensive travels in Europe, he was appointed professor of French and Spanish at Harvard University in 1817; there, in the 1820s, he proposed broadening the curriculum, dividing the college into departments of related subjects and granting students the right to choose a number of elective subjects to complement the basic required curriculum. Considered radical for the day, his proposals were only partially adopted. After several years of campus infighting, he resigned, complaining, "I have been contending, against a constant opposition, to procure certain changes which should make the large means of the College more effectual for the education of the community. In my own department I have succeeded entirely, but I can get these changes carried no further. . . ."

His proposals were eventually adopted, but not until after he left Harvard, in 1835. He spent the next three years in Europe, gathering materials for his *History of Spanish Literature* (1849), a three-volume work that took him 10 years to complete. A founder of the Boston Public Library, he spent 1856–57 touring Europe to acquire books for the library, to which he later donated his own extensive collection of Spanish literature.

Tinker v. Des Moines Independent Community School District A 1969 U.S. Supreme

Court ruling that public school officials cannot arbitrarily deprive students of their First Amendment rights to nondisruptive free speech. The case marked the first time the Court extended certain constitutional rights to minors.

Tinker involved the suspension in 1965 of three high school students, aged 13, 15 and 16, for wearing black armbands to protest the Vietnam War. Except for their armbands, they made no other attempt to protest the war on campus, and the Court ruled that “the Constitution does not stop at the public school doors like a puppy waiting for its master, but instead, it follows the student through the corridors into the classroom, and onto the athletic field.” Pointing out that school officials routinely allowed students to wear political buttons, the Court said that the suspension of the students for wearing armbands was based solely on official disagreement with the political opinions of the students and not because the students had disrupted school routine in any way. The Court made it clear that its decision applied only to “symbolic speech” and not to demonstrative protests or conduct that might disrupt discipline or interfere with the rights of others. The court clarified its position in 1986 in *BETHEL SCHOOL DISTRICT NO. 403 V. FRASER*, when it upheld the right of Bethel High School to suspend a student for using obscene, profane language and gestures in a speech before the student assembly and to bar the student from speaking at graduation ceremonies. Nor did the decision in any way strip public schools of their inherent right to regulate student conduct. Further defining the extent of student freedom of speech in 1988, in *Hazelwood School District v. Kuhlmeier*, the Court ruled that schools can maintain editorial control over student articles in school-owned publications and that, in effect, students do not have unlimited freedom of expression.

title A heading of a particular section in a law. Often, a particular title in the law has such

far-reaching effects that the title’s number—usually a Roman numeral—is commonly used to refer to the particular section and its consequences. Although many laws have various titles, two titles in education are of particular importance:

- Title I. The best known of six titles in the ELEMENTARY AND SECONDARY EDUCATION ACT OF 1965, a broad piece of legislation designed to improve the quality of American public school education. Formerly called “CHAPTER I,” Title I provided for the special education needs of an estimated 5 million to 6 million educationally deprived, low-income students, furnishing funds to local educational agencies and schools for such services as remedial reading, remedial mathematics and special summer programs.
- Title IX. The commonly used, abbreviated name for the section of the EDUCATION AMENDMENTS OF 1972, prohibiting discrimination on the basis of gender. “No person in the United States,” it reads, “shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any education program receiving federal financial assistance.”

Enactment of Title IX had shattering effects on educational traditions in the United States, forcing formerly all-male and all-female institutions to open their doors to students of the opposite gender and to provide equal facilities for each gender, including equal athletic facilities, equal numbers of teams and equal time and access to all practice facilities. A protection against discrimination for males as well as females, Title IX applied to all educational institutions from preschool through higher education and adult education, with the exception of certain types of religious schools, sororities and fraternities and youth organizations such as the Boy Scouts and Girl Scouts. By the mid-1990s, almost all educational institutions had complied with Title IX provisions except a

handful of all-male military schools and colleges in the South.

top-down model of reading A system of reading instruction in which children learn the meanings of entire words by sight—by recognizing the distinctive shape and context of each word in a sentence. Top-down reading instruction contrasts with the **BOTTOM-UP MODEL**, which depends on piecing together small parts, or phonic sounds, to form letter, syllabic and eventually word sounds. In the top-down model, children learn the whole word first, then take it apart to learn each letter and its individual sound. Most children instinctively use both methods in learning to read, and few teachers rely entirely on one approach in reading instruction. Most preschoolers, for example, have already used the top-down model in learning to read, but not spell, such words as “**CORN FLAKES**,” which they have seen on signs and packages since infancy. Developmental, and perhaps hereditary, differences often see some children more adaptable to one model than the other. Many children are almost incapable of learning from the top down and are almost totally dependent on “sounding out” words, letter by letter, from the bottom up.

total communication An all-encompassing approach to teaching the hearing-impaired, by using a combination of oral speech, lip reading, signing and finger spelling. By using all available methods of teaching, the approach obviates the debate among some educators of the hearing-impaired on the advantages of manual over oral teaching methods and vice versa.

tracking A system of grouping students in classes according to ability and curriculum. Introduced in Britain in the 1920s as “streaming,” tracking by ability became ubiquitous in U.S. public schools after World War II, when

stricter enforcement of child labor laws and waves of immigration produced a vast expansion of the public high school student population. The elementary and middle school tracking system grouped children by ability, with faster or slower classes in each grade. At the high school level, tracking was organized on two levels: On one level, students were grouped according to curriculum (academic, general and vocational) and on the second, students on each track were grouped in classes according to ability.

The theory behind tracking maintains that children of nearly equal abilities should be grouped together for learning because they absorb knowledge at the same rate, making instruction more efficient. The theory fails to take into account different rates of development, however, and ample studies have proved tracking to be one of the most debilitating approaches to education ever devised. Studies by the Johns Hopkins Center for Social Organization of Schools show that mixed-ability groupings have no ill-effect on high achievers and actually improve the performance of low achievers. In contrast, when students are grouped by ability, low-ability groups get slower instruction, face lower teacher expectations, exhibit increased behavior problems and turn low achievement into a self-fulfilling prophecy.

With the exception of academic-vocational tracking, ability grouping has proved of benefit only to the most gifted students, while limiting and even impeding the educational progress of average and slower students and, most especially, of poor, minority students. Indeed, critics of tracking say it is nothing more than an insidious form of economic discrimination that is resegregating American students by race in the guise of improved education. According to a 1994 study by the Rand Corporation, advanced classes made up 34% of the math and science curriculum at heavily white schools,

while making up only 12% of the curriculum at schools whose students are 90% or more black.

In 1988, the U.S. Department of Education's National Center for Educational Statistics conducted a National Longitudinal Study of 14,000 eighth grade students in public schools and obtained revealing data on ethnic and racial profiles grouping in English and math classes. About 40% of Asians, 32% of whites, 18% of Hispanics, 15% of blacks and 9% of American Indians were placed in high-ability English classes, and 47% of Asians, 35% of whites, 18% of Hispanics, 15% of blacks and 10% of American Indians were placed in high-ability math classes. In contrast, only 16% of Asians and 14% of whites, but 29% of Hispanics, 34% of blacks and 35% of American Indians were placed in low-ability English classes, while 17% of Asians, 15% of whites, 25% of Hispanics, 35% of blacks and 34% of American Indians were placed in low-ability math classes. On the socioeconomic scale, 39% of the top socioeconomic quarter of the students were placed in high-ability classes, while only 13% of the lowest socioeconomic quarter were placed in high-ability classes.

The department's findings provoked a heated debate over whether placements reflect student abilities or whether student abilities reflect the effects of placement. The debate remains unresolved, but there is little doubt that, with ability grouping already in place at preschool levels, educators have little opportunity to prove that mixed-ability groupings might hold an answer to higher student achievement in later grades. Because gifted children from higher socioeconomic levels make up the majority of the student population in high-ability groupings, it is unlikely that affluent communities will willingly abandon a system that favors their children.

Ostensibly, each of the three broad curricular tracks at the high school level—academic,

vocational and general—was designed to accommodate students according to their interests, but, in fact, placement on each track is usually determined by school authorities whose decisions are normally final and mandatory. Gifted students and academic achievers are usually assigned to the academic track; academically slower but manually skilled students are placed on the vocational track; and the slowest, most unskilled and, usually, most unmotivated students are consigned to the general track.

The academic track harbors a range of college-bound students, with ability groupings within the track absorbing students of differing intellectual abilities. The most gifted usually enroll in honors classes to prepare for academically selective four-year colleges. Most others on the academic track tend to enroll in less selective four- or two-year colleges, most with open-enrollment admission policies. The vocational track harbors a startlingly heterogeneous student population. Although consistently unmotivated academically, students on the vocational track are not necessarily slower than students on the academic track. They range from students with superior manual skills, who are extremely motivated to learn an industrial craft, to behaviorally dysfunctional students placed in vocational education by school psychologists hoping to use the track as a form of occupational therapy.

Between the extremes in vocational education is a broad range of students with widely varying degrees of motivation and intellectual ability. Like the academic track, the vocational track of many high schools is often divided into classes based on student abilities. Those at the upper end of the ability/motivational scale are usually clustered in so-called TWO-PLUS-TWO and TECH-PREP PROGRAMS—four-year courses of study beginning in junior year of high school and continuing through two years of an affiliated community college. Where no such pro-

grams are available, higher-level vocational track students usually enroll in COOPERATIVE VOCATIONAL EDUCATION programs with nearby industries, spending a half-day at school and a half-day at a cooperating firm that offers students on-the-job training as part of the total vocational-education package.

Of the three broad tracks, the general track has the least direction and has proven to be a national disaster in public education in the decades since World War II, producing two-thirds of all high school dropouts in the United States during the last half of the 20th century. More than one-third are unable to find work and join the chronically unemployed. A dumping ground for the unmotivated, the slow, the troubled, the behaviorally dysfunctional and too many of the learning disabled, the general track grants one-fourth of its credits for work outside school, personal improvement courses and physical and health education. The remainder of the program consists of childish simplified versions of conventional academic courses—usually called general science, general social studies, general math and general English, with the last consisting of remedial work in reading and writing. Dale Parnell, the longtime president of the American Association of Community and Junior Colleges, described the high school general education program as “the academic and vocational desert of American education. [It] relates to nothing, leads to nothing and prepares for nothing.” Indeed, it leaves the majority of its students semiliterate, without the intellectual and academic skills to obtain higher-level education in either the skilled or semiskilled trades.

Some school systems began abandoning the general track in the late 1970s in favor of separate, freestanding “ALTERNATIVE” SCHOOLS, where educational specialists could work with dysfunctional youngsters in small groups, while school psychologists worked with them on an individual basis. The development of

alternative schools, however, progressed extremely slowly because of the high cost of such individualized education. By the mid-1980s, 80% of American secondary schools and 60% of elementary schools used some form of ability grouping; by 1994, studies by the Rand Corporation indicated that such tracking had actually increased, rather than decreased, as the socioeconomically powerful demanded special, advanced classes for their children. By then, too, however, the poor performance of students in the general education track had pulled average student academic achievement in public schools to such low levels that American industry—and indeed the general public—demanded reforms to force schools to raise academic standards. Congress responded by enacting the landmark GOALS 2000 legislation and the SCHOOL-TO-WORK OPPORTUNITIES ACT OF 1994, which, together, forced most public schools to abandon general education—and most states to reinforce academic education with required academic proficiency testing of all public school children. The reforms did not eliminate tracking, but they raised minimum academic standards for the lower academic tracks.

Tracking is not, of course, limited to elementary and secondary education. Higher education has long had widely accepted forms of tracking, with slower and faster sections in many subjects, including the sciences and modern languages. Tracking at the college or university level for intellectually developed students, however, has far fewer social implications than it does at the elementary and secondary school levels. Almost all state university systems are, in effect, divided into three academic tiers. In California, for example, the nine campuses of the University of California system accept the highest academically ranked graduating high school seniors; the 22 colleges in the second tier California State University system accept students from the middle academic ranks; and the more

than 100 California community colleges accept students not yet ready to handle the academic demands of four-year colleges.

trade schools See ENTERPRISE SCHOOLS.

transcendentalism In American education, an early 19th-century literary and philosophical movement in New England that rejected Puritan values and the doctrine of original sin and extolled the beauties of the individual as an element of the natural world. The movement not only produced a body of still-influential literature, it also was responsible for three utopian communities whose methods of instruction continue to influence American education.

Transcendentalism's roots go back to ancient Greece and the philosopher PLATO's affirmation of the concept of absolute goodness, an indescribable quality known only intuitively, but evident when sensed. Religious philosophers extended the concept to God, in that God is indescribable and exists outside the realm of nature and human understanding. Later, the concept was extended to include the soul, truth and a number of other concepts that, once again, were beyond finite human experience. The New England movement began in 1836 as an intellectual rebellion against Puritanism, Calvinism and all other dogmatic, ritualistic religious institutions, which, in effect, espoused the concept of one's worthlessness in the absence of church affiliation. Extolling the beauties of nature and humankind, the New England transcendentalists insisted that divinity permeated everything in the universe, both animate and inanimate, turning all into divine objects, filled with beauty, truth and goodness. Intuition was therefore superior to reason as a human faculty because, unlike self-inspired reason, intuition was divine in origin.

In 1836, a group of New England philosopher-educators, all of them dreamers, idealists

and romantics, formed what became the Transcendental Club in Boston. There they spent long nights in discussion, produced *The Dial*, a periodical that recorded their thoughts and planned the establishment of a variety of utopian communities. Their leaders included essayist RALPH WALDO EMERSON, educator BRONSON ALCOTT, philosopher WILLIAM ELLERY CHANNING, author Nathaniel Hawthorne (1804–64) and author-naturalist-philosopher Henry David Thoreau (1817–62). Transcendentalists founded two utopian communities. Neither outlasted their founders, but both had immediate, lasting influences on American education: Brook Farm and Fruitlands.

Brook Farm was a cooperative community established in West Roxbury, Massachusetts, in 1841 by Alcott, Channing, Emerson, Hawthorne and other transcendentalists. Officially known as the Brook Farm Institute of Agriculture and Education, the venture was a 200-acre farm, owned by a joint stock company, whose members were to contribute and share equally in all aspects of farm activities. The community's school offered free education to all who would enroll. Instruction was based on benevolence and affection and included nature study, dancing, music, vocational training and other nontraditional studies, in addition to basic academics. Abandoned in 1847, it was the setting of Hawthorne's novel *The Blithedale Romance* (1852).

Fruitlands, described in Louisa May Alcott's *Little Women*, was founded by her father, the innovative, though undisciplined, teacher Bronson Alcott, who believed firmly in universal public education. Parents of students at his Boston school withdrew their children after he admitted a black child, and in 1842 he founded Fruitlands, a farm in Concord, Massachusetts, where he lazed through the summer days, philosophizing aimlessly with his friends Emerson, Hawthorne and Thoreau. Alcott's teaching methods, however, eventually helped revolutionize American pedagogy. Believing that each

child's character was a gift of God, he did away with corporal punishment and introduced play, gymnastics and a school library that gave children freedom to choose their own books. In class, he dispensed with textbooks and, instead, introduced the Socratic method of teaching, used by Plato to teach students through gentle, persuasive conversations. His conversations produced scores of innovative and now-classic learning devices and teaching techniques. Alcott codified his teaching techniques in a manual of instruction, which, like a similar manual produced at Brook Farm, influenced educators for decades thereafter.

In contrast to the social utopias at Brook Farm and Fruitlands, Thoreau sought community with nature on the shores of Walden Pond, where he settled for two years, by himself, in a house he built in 1845. Although he never produced an instructional manual for teachers, his immortal journal, *Walden, or Life in the Woods*, served as a guide for discovering one's true self through solitude and communion with nature.

transcript An official, printed record of a student's academic grades and school or college performance, usually carrying an explanation of the school's grading system and a raised seal or other certification of authenticity. Although available to students, transcripts are usually not accepted as proof of previous academic performance unless posted directly from the certifying institution to the recipient institution.

transfer students College students who begin their postsecondary school higher education studies at one institution before enrolling at one or more subsequent institutions to obtain their bachelor's degrees. At least 45%, or about 10 million of the 17.6 million students in American four-year colleges, completed at least one course at another postsecondary institution after graduating from high school and before enrolling at their current college. About 55% of

transfer students attended vocational-technical schools or community or junior colleges before enrolling in a four-year college. Transfer students are not to be confused with CONCURRENT-ENROLLMENT students, who take one or more courses at another postsecondary institution while enrolled at the institution from which they will obtain their bachelor's degree.

(See also SWIRL PATTERN.)

transformational generative grammar In education, a term borrowed from linguistics and applied to a "bottom-up" approach to understanding and teaching grammar by using the deep structure of a sentence—a simple noun and simple verb—as a base, or foundation, on which a wide variety of surface structures may be constructed. The opposite of DIAGRAMMING, or parsing, sentences, transformational generative grammar uses an almost mathematical approach, based on strict, explicit rules, to generate sentences and transform their meaning. Thus, "cat plays" may constitute the deep structure of a sentence, whose superficial structure might consist of any of a wide variety of adjectives, adverbs and other words such as "the," "soft," "hungry" and "vicious," which can transform the meaning of the deep structure as they generate a complex sentence structure. "The cat plays with its food," for example, is a structure based on the same deep structure as "The cat plays with the mouse." A traditional form of teaching grammar, along with diagramming, transformational generative grammar has largely been replaced by the WHOLE LANGUAGE approach to teaching grammar in most American schools.

transition school An organizational structure that links the curriculum of the last two years of high school with two or more years of study at an affiliated institution of higher education. A phrase coined in the 1980s by Ernest L. Boyer, the president of the Carnegie Foundation

for the Advancement of Teaching, transition schools ideally would provide programs in which only half of each student's time would be spent completing the traditional, academic core curriculum (English, science, mathematics and social studies). The other half of the time would be spent studying an "elective cluster" of courses, with each cluster carefully designed for each student's individual long-term needs. Thus, many vocational students now participate in so-called **TECH-PREP** or **TWO-PLUS-TWO PROGRAMS**, a course of study leading to certification in a specific craft or vocation after completion of four years of linked study that includes the last two years of high school and two years of study at an associated community college. Transition programs at some schools offer advanced, college-level courses during the last two years of high school that permit students to move directly into sophomore or even junior year of college.

Although used to refer to linked high school-college programs, the phrase transition school also refers to a handful of experimental schools of **EARLY COLLEGES**, that combine the last two years of high school with the first two years of college in a single, independent institution. Pasadena (California) City College was first among these in 1920, but Simon's Rock of Bard College, at Great Barrington, Massachusetts, admits qualified students immediately after they have completed the tenth grade of high school and awards them associate degrees two years later and bachelor's degrees after they successfully complete four years of study.

trimester One-third of an academic year. Although traditionally organized into two parts, or semesters, the academic year is sometimes divided into three parts that condense materials in each course somewhat, but permit students to study a larger number and broader range of courses. Although used at a handful of

private secondary schools, the trimester is more common at colleges.

Triple-T program A short-lived effort by the U.S. Office (now **DEPARTMENT**) OF **EDUCATION** to reform teacher education. Funded under the **NATIONAL DEFENSE EDUCATION ACT**, the Training of Teacher Trainers program, as Triple-T was officially named, consisted of 58 university programs involving hundreds of schools and 42,000 students during its five-year existence, from 1968 to 1973. Although Triple-T did produce some minor improvements in teacher training by involving college liberal arts faculty in teacher education, the overall program lacked a unifying policy. The result was a disjointed program of independent projects that produced no overall changes in the national approach to teacher education.

trivium and quadrivium The two categories of the seven liberal arts, as taught in the first European universities during the Middle Ages. The trivium, a Latin word for the meeting of three roads, consisted of grammar, which included the study of literature; dialectic, or logic; and rhetoric, which included the study of law. Students received bachelor's degrees after successfully completing the trivium and then went on to earn their master's degrees by studying the quadrivium, meaning a crossroads, or meeting of four roads. The quadrivium was made up of arithmetic; geometry, which included geography and natural history; astronomy, which usually included astrology; and music, almost all of it church-related.

The term liberal arts dates from ancient Greece, where **PLATO** and **ARISTOTLE** made a distinction between the liberal arts, for development of intellect and morality, and the practical arts. Although the Roman scholar Marcus Terentius Varro wrote of the liberal arts during the first century B.C. and of such utilitarian arts as medicine and architecture, the breakdown

of the liberal arts into the seven specific subject areas of grammar, logic, rhetoric, geometry, arithmetic, astronomy and music seems to have awaited the writings of a group of fifth-, sixth- and seventh-century A.D. scholars that included the Carthaginian born writer Martianus Capella, the Roman historian Flavius Magnus Cassiodorus and the Spanish scholar St. Isidore of Seville. The further breakdown into the elementary trivium and advanced quadrivium came with the founding of the first universities in the Middle Ages.

Troops to Teachers A program originally sponsored by the Department of Defense to encourage qualified retiring members of the armed services to serve as teachers or aides in low-income school districts suffering shortages of qualified personnel. Started in 1994, the program provided such districts with more than 6,000 former members of the armed services, as qualified teachers, counselors and administrators to schools in 30 states. Now part of the CORPORATION FOR NATIONAL AND COMMUNITY SERVICE, the program matches retiring service personnel, according to their background in specific subjects, organizational skills or counseling skills, with the needs of school districts facing staff or teacher shortages.

The Pentagon pays retiring service personnel up to \$5,000 for the cost of obtaining teaching certificates and a bonus of \$10,000 a year to teach for three years. Because of the disproportionately high number of retiring military personnel who are black and Hispanic, the program has brought strong minority male and female role models into the inner-city neighborhoods most in need of the program. Of all inner-city schools, 23% had vacancies they could not fill with qualified teachers when the Troops-to-Teachers program was started. In high schools with large minority enrollments, only 50% of all students were taught by qualified mathematics or science teachers. In addi-

tion to former troops, the program is open to retiring civilian employees of the Defense and Energy departments, as well as civilians who worked for military contractors such as General Dynamics or McDonnell Douglas.

truancy Unexcused absence from elementary or secondary school, in violation of state education laws. Although local schools, school districts and state and federal education authorities compile careful statistics on student absentee rates, there are no specific statistics on truancy as an element of ABSENTEEISM, largely because it is often difficult to prove unless a student or group of students is actually apprehended by police. Parents can easily convert truancy into a simple—and legal—absence from school by fabricating an excuse that the student was needed at home for personal family reasons. Moreover, many students apprehended by police as truants have legitimate reasons for not being in school. Some have been excused for medical or other reasons, and others simply attend private schools whose vacation periods and holidays often fail to coincide with those of public schools. Thus, random arrest of school-aged children on the street during school hours often produces serious civil rights complications.

Teachers cite student absenteeism as a serious problem in 12% of American public schools. At the high school level, more than 27% of public school teachers called student absenteeism a serious problem. The U.S. Department of Education reports that nearly 35% of public school tenth graders and 26% of twelfth graders are absent 14 or more days during the school year, and, therefore, considered chronic truants. The rates are highest among children from the lowest socioeconomic status—41.6% for tenth graders and 29.8% for twelfth graders. The rates for children in the middle socioeconomic group were 34.3% and 26.6%, respectively, and for the highest socioeconomic group,

29% and 21.8%. In some cities with extensive urban slum areas, truancy rates can reach 50% or more on any given day. In Detroit, 63,000 of the 180,000 public school students missed more than one month of classes last year. State funding of each school is based on daily attendance rates, and schools plan their annual budgets on the basis of the local school-age population. High truancy rates can leave a school district with fewer than anticipated students and, consequently, insufficient funds to meet its budget.

Although almost all states have truancy laws, these have had mixed results in halting the increase in truancy rates. Some cities have staged police sweeps to arrest all school-age children on the street. A sweep in San Jose, California, in 1993 netted 6,000 truants, and the city subsequently reported a sharp increase in school attendance rates to 98.5%—along with a 35% decline in daytime burglaries. Some states passed laws to allow judges to punish parents of truants with heavy fines, loss of welfare payments and even jail terms for violating compulsory education laws, but critics maintain such laws inflict cruel punishment on innocent siblings of a truant by imprisoning their parents and depriving families of badly needed funds for food and rent. In 1996, South Carolina enacted a law allowing judges to jail truants for up to 90 days if they miss school 10 or more days in a school year. In 1999, the state jailed 334 truants, but the jailings did little to affect overall truancy rates—only about three or four percentage points. The poor results, say most experts on truancy, is because the problem usually relates to deep-seated family problems—mental, intellectual, academic, emotional, psychological or social dysfunctions—that require therapy and counseling. The U.S. Department of Education opposes incarceration of truants and automatically withholds 25% of federal aid-to-education dollars to states with such laws. Unfortunately, the vast majority of truancy occurs in the poor-

est areas of the United States, where schools lack the funds to provide the needed services to combat truancy. The result is an overreliance on law-enforcement authorities that produces little lasting effect on the problem. More often than not, truancy is simply ignored after it becomes chronic, and individual truants are simply allowed to drift away from school and integrate into society as best they can.

true-false test One of the most common forms of objective testing, with questions stated as declarative sentences that demand a simple student response of “correct” or “incorrect.” Easy to construct and to score, true-false tests can give teachers quick indications of superficial student knowledge about a topic. On the other hand, the simplicity gives each child at least a 50% chance of guessing the correct answer for each question, thus skewing test results in favor of aggressive students who guess the answer to every question, while more anxious students leave blank answers to questions about which they may be unsure.

Truman, Harry S. (1884–1972) Thirty-third president of the United States, whose dedication to education helped convert American colleges and universities into instruments of universal education for the entire American people. A champion of civil rights, Truman was the first American president to demand an end to racial, religious and other forms of segregation in education and other areas of American life. Ignored by Congress, Truman nevertheless desegregated the American armed services by executive order in 1948.

A farmer’s son from Missouri, he managed to finish high school but had no funds for college and went to work as a bank clerk and later as a farmer. After serving in World War I, he set up a clothing store in Kansas City, but he and his partner went bankrupt in 1921, and he drifted into local government jobs that served as

a springboard to local political office and, eventually, the U.S. Senate. Named President Franklin D. Roosevelt's vice presidential running mate in 1944, he succeeded to the presidency after Roosevelt's death in April 1945, only three months after assuming the vice presidency.

Truman was an obsessive autodidact who made up for his lack of college education by studying history to a depth seldom reached by previous presidents or even by many scholars. In 1946, he established a COMMISSION ON HIGHER EDUCATION to study the possibility of universalizing higher education to give less affluent Americans the same educational opportunities and benefits as the affluent elite then attending college. The commission's report, *Higher Education for American Democracy* (1948), marked a turning point in American higher education and in civil rights. Five months after appointing his Commission on Higher Education, Truman appointed a COMMITTEE ON CIVIL RIGHTS "to safeguard the civil rights of the people." Both the commission and the committee declared "separate-but-equal education grossly unequal" and urged immediate enactment of "fair educational practices laws for public and private educational institutions, prohibiting discrimination in the admission and treatment of students based on race, color, creed, or national origin." In addition, the Commission on Higher Education urged an immediate doubling of higher education enrollments, an expansion of community colleges, and the establishment of federal scholarships for needy undergraduate and graduate students.

Congress ignored the two committee reports, refusing even to hold hearings on the proposals, but states—especially in the North—responded by expanding the number of community colleges and at least partially opening the doors of higher education to blacks. More important, however, the work of the two Truman groups provided the nation with a vision of the future and a program for the inevitable

democratization of education that would follow in the ensuing two decades.

truth-in-testing legislation A group of state laws that give students the right to see the actual results and scoring methods of standardized college and graduate school admission tests. First enacted in New York State in 1979, truth-in-testing legislation followed widespread complaints by students that they could not obtain the results on standardized admission tests in order to verify the accuracy of scoring and of their eventual grades. As a result, New York enacted a law requiring administrators of such standardized examinations as the Scholastic Aptitude Tests (now, Scholastic Assessment Tests), the American College Testing Program, the Graduate Record Examination, the Medical College Admission Test and the Law School Admission Test to make public all statistical information on such tests. In addition, they must make available to each student his or her answer sheet and a scoring key to allow students to verify their eventual grades. Until truth-in-testing legislation was passed, students would simply receive their grades on each test by mail and have no way of verifying their accuracy.

tuition The cost of formal instruction at an educational institution. Free at public elementary and secondary schools, some tuition is generally imposed on students at all colleges, public or private. Tuition does not cover any element of room costs, board or student extracurricular activities fees. Although levied at the beginning of each semester at most private elementary and secondary schools and colleges, tuition fees at public colleges and universities are often assessed on a course-credit basis, thus allowing students to pay only for the courses they actually take and extend the time they take to obtain their higher education.

In the 2005–06 academic year, tuition and mandatory fees at four-year private colleges

averaged \$21,500—nearly four times the average tuition at public colleges, where tuition costs are subsidized by public funds. Tuition and fees account for only 18% of revenues at public colleges, while state-government funds provide nearly 36%. In contrast, private colleges receive less than 1.5% of their revenue from state governments and depend on tuition for 38%. The sharp differences in average tuition costs between private and public colleges—\$21,235 versus \$5,500—have produced huge increases in applications to public colleges and a commensurate decline in applications to many private colleges, especially lesser-known mid-level institutions, where total annual costs, including tuition, room and board, soared to an average of more than \$32,000. Total costs at the best-known, most selective private colleges approached \$50,000. Tuition and fees reached about \$16,000 at private two-year colleges, compared with \$2,200 at public two-year schools.

In an effort to reverse the trend in declining enrollments, private colleges and universities offer huge discounts to compete with public colleges—tuition reductions averaging 40% in the form of “merit” scholarships, for example, and three-year bachelor’s degree programs instead of the traditional four. Some colleges offer students four years for the price of three or a fifth year of free graduate study after completion of the bachelor’s degree program. Indeed, fewer than 20% of American college students paid full tuition in academic 2005–06. Rather than reduce tuition, Princeton University diverted income from its \$11.2 billion endowment fund to replace all student loans with outright grants that permit students to graduate debt-free.

(See also FINANCIAL AID.)

tuition payment plan A school, college or privately sponsored program whereby tuition costs for elementary, secondary or higher edu-

cation may be paid in monthly, interest-free installments instead of a large lump sum at the beginning of the semester or academic year. Parents and students can thus pay tuition with income instead of capital. To cover lending costs and earn a profit, the payment plans usually charge a modest annual origination fee and begin collecting monthly installments for the following year’s tuition four months in advance. By investing the advance payments, the plans can earn interest on collected funds before having to pay the educational institutions. Tuition payment plans are usually membership plans involving only a specific group of participating schools or colleges.

In the late 1990s, a new type of payment scheme—the COLLEGE SAVINGS PLAN—began replacing tuition payment plans, after Congress passed new tax legislation deferring payment of federal income taxes on the annual earnings of such plans until the funds are actually withdrawn. By 2000, all but five states had established such plans, which operate much like mutual funds, with investment companies placing the funds in a mix of stocks, bonds and money market funds. College savings plans allow families to invest regularly as much as \$55,000 a year. Some states also defer payment of their own taxes on income from such plans; many waive taxes entirely; and a few, such as New York, allow investors to deduct some of their contributions. The investments incur no federal gift taxes, and annual interest, dividends and capital gains, when withdrawn to pay for college, are taxed at the student’s income tax rate, which typically is lower than that of the persons who funded the plan.

Turner, Asa (1799–1885) American clergyman, educator and cofounder of the famed “YALE BAND,” which was instrumental in bringing public education and colleges to the West. Born in Massachusetts, he attended and was ordained at Yale in 1830. While there, he

joined an association of seven theology students who pledged to carry education westward by founding an institution in Illinois. There, they hoped to train preachers and teachers who would fan out across the rest of the west to establish more churches and schools. Playfully called the Yale Band (they played no instruments), the group sent Turner to establish a church in Quincy, Illinois, in 1830. He followed that triumph by helping to co-found Illinois College. He spent the next eight years tirelessly encouraging the growth of education in Illinois, establishing a public school in Quincy, soliciting funds for the college and assisting in the establishment of new congregations. In 1838, he moved to Denmark, Iowa, where he established another church and obtained a charter to found a new institution called Denmark Academy. He then joined members of an "Iowa Band" that had formed at the ANDOVER THEOLOGICAL SEMINARY to campaign for the establishment of public schools and to found Iowa College, which later merged with Grinnell College.

Tuskegee Institute (now, Tuskegee University) Historically, one of the most important institutions of African-American education in the United States. The first college operated entirely by African Americans, Tuskegee Institute stood as proof positive that blacks were the intellectual equals of whites in a state where it had been against the law even to teach blacks, who were regarded as subhuman.

Founded at Tuskegee, Alabama, in 1881, by African-American educator and former slave Booker T. Washington, Tuskegee started out in an old shanty and a dilapidated church, whose roof leaked so badly that a student had to hold an umbrella over Washington's head as he attempted to teach. At the time, there were no schools in Alabama for blacks, and the level of poverty and illiteracy discovered in Alabama "left me [Washington] with a heavy heart. The

work to be done in order to lift these people seemed beyond accomplishing."

He nevertheless opened the doors of his school to 30 students "about equally divided between the sexes," but he limited enrollment to students older than 15 who could already read. From the beginning, Washington hoped to train his students to be teachers and leaders who would educate other African Americans. But his students were former slaves from plantations and were so poor that he had to do "something besides teach them mere books." He had to teach them basic hygiene. "We wanted to teach the students how to bathe; how to care for their teeth and clothing. We wanted to teach them what to eat, and how to eat it properly, and how to care for their rooms."

In addition, Washington wanted to teach them as many trades as possible, so that they could teach others to become needed members of their communities. He believed that "the whole future of the Negro rested largely upon . . . whether or not he should make himself, through his skill, intelligence and character, of such undeniable value to the community in which he lived that the community could not dispense with his presence." Any individual, said Washington, "who learned to do something better than anyone else—learned to do a common thing in an uncommon manner—had solved his problem, regardless of the color of his skin."

Washington proceeded to make work an essential part of student and faculty life at Tuskegee. In addition to agricultural and domestic work, students learned all aspects of construction, including design, architecture, masonry, carpentry and roofing. They learned to harvest trees, mill their own lumber, manufacture their own bricks, make their own clothing, mattresses, bedding and upholstery and build their own desks, chairs and furniture. They soon cleared the land and began growing



The first three buildings owned by Tuskegee. A cabin, henhouse and stable were all that remained on the plantation that Booker T. Washington purchased in Alabama in 1882 for \$500 and eventually transformed into Tuskegee Institute. (*Library of Congress*)

food, some to eat themselves and some to sell, to repay the \$500 Washington had borrowed to buy land for the college. Washington expanded the farm to include livestock, which soon produced enough to feed the faculty and students and even generated extra funds that permitted students to attend school full-time, without holding down jobs outside school.

At the beginning of the second year, Washington raised funds to build a large central building. Again, students dug out and laid the foundation and, with the faculty alongside, erected the superstructure. Washington marveled that "only sixteen years before . . . no Negro could be taught from books without the teacher receiving the condemnation of the law." Over the next 19 years, 40 buildings rose on the Tuskegee campus, all but four of them products of student-faculty labor. "Hundreds of men are now scattered throughout the South," Washington later reminisced, "who received their knowledge of mechanics while being taught how to erect these buildings. Skill and knowledge are handed down from one set of students to another in this way, until at the present time a building of any

description or size can be constructed wholly by our instructors and students, from the drawing of the plans to the putting in of electric fixtures, without going off grounds for a single workman."

Student skills soon earned money for the school. The kiln they built to make bricks became an important industry at the school. After 20 years, Washington could say that "our students manufacture twelve hundred thousand [1,200,000] bricks, of a quality suitable to be sold in any market. [White people] who had no contact with the school, and perhaps no sympathy with it, came to us to buy bricks, because they found out ours were good bricks. They discovered that we were supplying a real want in the community." The school had the same experience building wagons, carts and buggies. "The man who learns at Tuskegee to build and repair wagons and carts is regarded as a benefactor by both races in the community," said Washington. "The individual who can do something that the world wants done will, in the end make his way, regardless of race."



Like almost all other buildings at Tuskegee Institute, the Old University Chapel was designed by faculty and built by students in 1889, eight years after Booker T. Washington founded the school. It burned down in 1957. (*Tuskegee University Archives, Hawkins Studio*)

In 1896, Washington expanded the school by bringing in George Washington Carver to head the school's agriculture department, and Carver's work brought world renown to Tuskegee. When Washington died in 1915, he left behind him a monument of more than 100 buildings, spread over 25,000 acres, where more than 1,500 students trained each year in more than 300 trades and professions. At the time of Washington's death, the entire student body and faculty of 300 were African Americans and almost all were the descendants of former slaves. No longer a trade and agricultural institute, Tuskegee University is now a coeducational professional and technical institution offering undergraduate and graduate programs to more than 3,000 students, most of whom are African American, in liberal arts and sciences, agriculture, business, education, engineering, health professions and veterinary medicine.

tutor A teacher, usually private, who instructs students individually or in small groups. A traditional method of educating the children of the nobility in Britain, tutoring was common in America before the growth of public and private schools. Except at the university level (see TUTORIAL METHOD), a tutor is now often a special-education teacher who works with slower or learning-disabled students during free hours at school or after school hours and on weekends. Some families also use traditional tutors to help their children improve work at school with individualized compensatory instruction and critiques of written work.

(See also PRIVATE INSTRUCTION.)

tutorial method A method of instruction commonly used in English universities, where teachers meet individually with students for intensive discussions about a topic based on

materials the student has been assigned to study. Although some American universities and academically selective private schools use the tutorial method, most American colleges have refashioned the tutorial into seminars and so-called discussion groups, where a graduate student conducts in-depth conversations with students who have studied a particular topic and also absorbed the professor's lecture on the material.

two-plus-two program A four-year, cooperative, vocational education program that begins in the junior year of high school and continues through the senior year of high school and two years at an associated community college. Usually administered and taught by college teachers or specially trained high school teachers, the program is designed to professionalize vocational education by bringing college-level instruction into the high school. By creating a four-year continuum, the program does not permit students the luxury of the usual academic let-down during the spring of senior year as they prepare for high school graduation; graduation at high school does not guarantee promotion of two-plus-two students to the third year of the program at the community college. Also called TECH-PREP PROGRAMS, two-plus-two programs create a separate, transition school that coincidentally uses the classrooms of two separate institutions but is, in effect, a four-year school, running from eleventh grade to fourteenth grade, with its own requirements for graduation and receipt of a professional certificate and an associate degree. In 2002, more than 1,000 colleges had established two-plus-two programs with local high schools in 21 states. Enrollment totaled more than 1.25 million high school students, or 9.4% of the public high school student population.

underachievement In education, an often vague term referring to failure to perform academically at levels commensurate with a student's potential as measured by intelligence and other standardized tests. In general, educators consider high scores on standardized tests—e.g., I.Q. tests and SCHOLASTIC ASSESSMENT TESTS—and low classroom grades an indicator of underachievement. Where such evidence is manifest in the elementary and early secondary school years, teachers, counselors and school administrators attempt to ferret out some of the most frequent causes, such as poor educational or socioeconomic background; psychological, emotional or medical problems, including learning disabilities; developmental differences; poor study habits; lack of parental support; lack of interest or motivation, generated by cultural background not conducive to academic pursuits; premature or inappropriate tracking of a student with high potential in low-ability classes, with low teacher expectations; UNIDIMENSIONAL CLASSROOMS, where teachers assume that a single classroom strategy is equally effective with all students; boredom resulting from above-average intelligence and teacher or school failure to provide adequately challenging materials.

The causes of underachievement, however, are often difficult to pinpoint. In many instances, a lack of aptitude in one subject area may produce discouragement that spills over

into other areas. Low conceptual aptitudes in specific areas such as abstract thinking may also have a general effect on overall performance. In many instances, too, teachers may label a student an underachiever by misinterpreting a winning personality or social sophistication as an indicator of above-average intelligence and setting their expectations at levels far higher than the student's actual ability or potential. But the harshest criticism of the concept of underachievement is its philosophical foundation: that standardized tests do, indeed, measure each student's potential accurately and that every student can and therefore should be able to produce classroom grades commensurate with his or her scores on standardized tests. The universality of such an assertion has yet to be proved.

unidimensional classroom A sociological term referring to the application of a single teaching strategy to all students in a given classroom. Although the introduction of computers has individualized teaching somewhat, most teachers in most public school classrooms continue—for practical reasons—to assign one task at a time to all students, on the assumption that all should be capable of completing it. Relative student performance in such classrooms generally remains constant, with the top students at the beginning of the year remaining at the top at the end of the year and the poorest

students seldom raising their performance levels. Some teachers continue to conclude, as a result, that student failure is self-inflicted, the result either of an unwillingness to work hard enough or of congenital deficiencies. Despite ample evidence that instruction tailored to each student's developmental and aptitudinal needs can alter academic performance, the exigencies of large classrooms in many public schools make individualized instruction all but impossible and the unidimensional approach almost inevitable.

unified phonics method A highly structured method of reading instruction based on the learning of 70 phonograms, or sounds, before actual reading begins. Developed in the late 1960s and often called the Spalding Method, the technique calls for oral recitation and memorization of the sounds in each phonogram (one or more letters that produce a unique sound that creates a word or word element). For example, although the phonogram "at" is itself a word, it is but one element in such words as "cat attack." Students label, learn and write each phonogram by its complete sound, then learn basic spelling rules and eventually use phonograms to build words from a specific word list developed for the program. Only after students have learned an adequate number of words do they begin reading whole sentences.

(See also BOTTOM-UP MODEL OF READING; PHONICS; TOP-DOWN MODEL OF READING.)

Unitarianism A loosely knit, non-trinitarian Christian religion whose rejection of the Calvinist concept of predestination changed the course of American education in the early 19th century. Although antitrinitarian movements, such as the Monarchian belief in the undivided unity of God, date from the early church of the second century, the Unitarianism that so influenced American education was an outgrowth of 17th-century Arminianism. Named for the Dutch

Calvinist and professor of theology Jacobus Arminius (1560–1609), Arminianism affirmed the existence of human free will. American Unitarianism of the early 19th century, as defined and articulated by Boston pastor WILLIAM ELLERY CHANNING, conceived of a loving God who provided humans with dignity and offered them the possibility of perfectibility.

The concept was nothing less than heresy to the Calvinist Puritans, whose Congregational churches had dominated New England politics, education and thought for nearly two centuries. As Unitarians took charge of Harvard College, then primarily a Congregational ministerial school, conservative Congregationalist leaders left for Andover, Massachusetts, in 1808 to found the rival Andover Theological Seminary. Their move not only split the ranks of Congregationalist leaders, it also shattered Congregationalism from its position as the official church of several New England states (and therefore as the foundation of American education). Hardly mentioned in today's United States, Unitarianism was without question the most powerful religio-philosophical movement in the early 19th century. Indeed, many of its then-revolutionary concepts—especially that of human perfectibility through knowledge and education—were so totally absorbed into the national American psyche that they, and not Congregationalism, became the basis for building the American system of public education.

As pastor of the Federal Street Church of Boston, Channing became the most influential spokesman for Unitarianism, which he did not see as the new religion, but simply as a redefinition of traditional Congregationalism and a reinterpretation of Scripture. If humans were indeed created in the image of God, then it followed that "in ourselves are the elements of Divinity" and, therefore, the distinct possibility of perfectibility and salvation. He envisioned formal education as a basis for achieving the Unitarian ideal of human perfectibility.

Although recognizing the role of parents, ministers and institutions in education, Channing and his supporters saw schools, teachers and a public, common school system as essential to the “flowering” of the American child and American culture. “The child,” he said, “is not put in the hands of parents alone. It is not born to hear but a few voices. It is brought at birth into a vast, may we say an infinite, school. The universe is charged with the office of its education.” Teachers, he said, were primarily responsible for educating American children and, as such, their office was “the noblest on earth.” Channing and the Unitarians, along with the closely allied TRANSCENDENTALISTS, became champions of universal public education and teacher training schools. In 1836, HORACE MANN, a Channing disciple, was instrumental in establishing the first state public school in the United States in Massachusetts.

Ironically, Unitarians were truer to the original Puritan-Congregationalist polity than the more orthodox Congregationalists in that they believed in complete congregational independence—the concept that caused the original split between the English Puritans and the Church of England. In 1961, the Unitarians (officially known as the American Unitarian Association) merged with the Universalist Church of America to form the Unitarian Universalist Association. Although it counts about 215,000 members in more than 1,000 churches, the organization has no official statement of faith and does not require any specific religious belief or practice. Individual congregations remain completely independent, and the umbrella association simply serves as a coordinating body for women’s federations, service committees and religious education.

United Federation of Teachers The New York City local of the American Federation of Teachers, a national labor union for teachers.

(See ALBERT SHANKER.)

United Nations International School A unique coeducational college-preparatory day school founded by parents working at the United Nations in New York, to give their children an international education while preserving their individual, cultural heritages. Accredited by the New York State Board of Regents and the Ministère de l’Éducation Nationale de France, it offers a curriculum of English, French, music, art, science, mathematics, social studies and physical education, along with preparation for the International Baccalaureate, which is recognized by universities throughout the world. English is the primary medium of instruction. Teachers of ENGLISH AS A SECOND LANGUAGE provide special instruction for students lacking English-language skills. Classes in some mother tongues are held after school if there is enough demand and extra funds are provided.

Former United Nations secretary-general U Thant called the United Nations International School “an experiment in cultural understanding . . . [where] students who face each other across a laboratory bench today may, in a few years’ time, face each other across an international conference table. The lessons they learn today are the foundations upon which a significant contribution to international cooperation may be made tomorrow.”

United Negro College Fund An organization founded in 1944 to raise funds for a group of more than three dozen, largely southern, independent four-year colleges for African Americans. The fund raises between \$40 million and \$50 million a year to distribute in unrestricted funds and grants to member colleges, and its endowment—about \$65 million in 2005—generates enough income for 8,000 scholarships a year. UNCF also administers the largest minority scholarship program in the nation: a \$1 billion grant from the BILL AND MELINDA GATES FOUNDATION.

United States Air Force Academy A unit of the Department of the Air Force for educating and training officers for the United States Air Force. Located north of Colorado Springs, Colorado, the academy was established as an all-male institution by an act of Congress in 1954, with the first class graduating in 1954. The first women were admitted in 1976. Procedures for nomination to the applicant pool are identical to those of the UNITED STATES MILITARY ACADEMY. In addition to scholastic aptitude, as measured by the SCHOLASTIC ASSESSMENT TESTS, applicants are judged on character, physical aptitude and condition, prior academic record and extracurricular activities. About 4,150—cadets about 15% of them women—from an applicant pool of more than 9,000 are admitted each year. All educational and living expenses at the academy are paid by the U.S. government, except for an initial \$2,500 deposit for uniforms and personal expenses. Cadets also receive annual salaries, commensurate with their rank in the U.S. Air Force. In addition to the arts and sciences, students obtain a general education in airmanship, including Air Force flying. Graduates receive a B.S. degree and are commissioned as second lieutenants in the regular Air Force. Physically qualified graduates receive pilot training after graduation. All graduates must serve at least five years in the armed forces.

United States Armed Forces Institute A unique educative institution that provided correspondence courses to more than 600,000 American servicemen and women during World War II. The institute also provided classroom instruction on army posts and aboard ship and even in theaters of operation throughout the war and during the occupation of Germany and Japan. The institute's program supplemented a massive, service-wide educational program necessitated by the high illiteracy and low skill rates of draftees. By mid-1942,

the Army was forced to provide specialized training to 63 of every 100 men; a year later, the figure rose to 90 of every 100. Limited to only a few weeks during each person's basic training, the educational effort had to turn illiterates into literates and then train them to be auto, truck and aircraft mechanics, bookkeepers, carpenters, medics and pharmacists' mates, quartermasters, signalmen, torpedomen and a host of other specialists. Even the most literate and often well educated draftees still needed some form of specialized education in engineering, meteorology, navigation, language translation and trauma medicine.

The institute's work produced one of the most massive educational programs ever mounted by any nation in history. It included literacy courses at reception centers across the United States and technical schools operated by the military at every base. In addition, the armed services established contractual arrangements with vocational schools, colleges and universities to provide service personnel with specialized training in foreign languages, engineering, medicine, dentistry, military government and other professional skills. Once trained and assigned to permanent duty, service personnel could then turn to the Armed Forces Institute to supplement the education acquired in their earlier training.

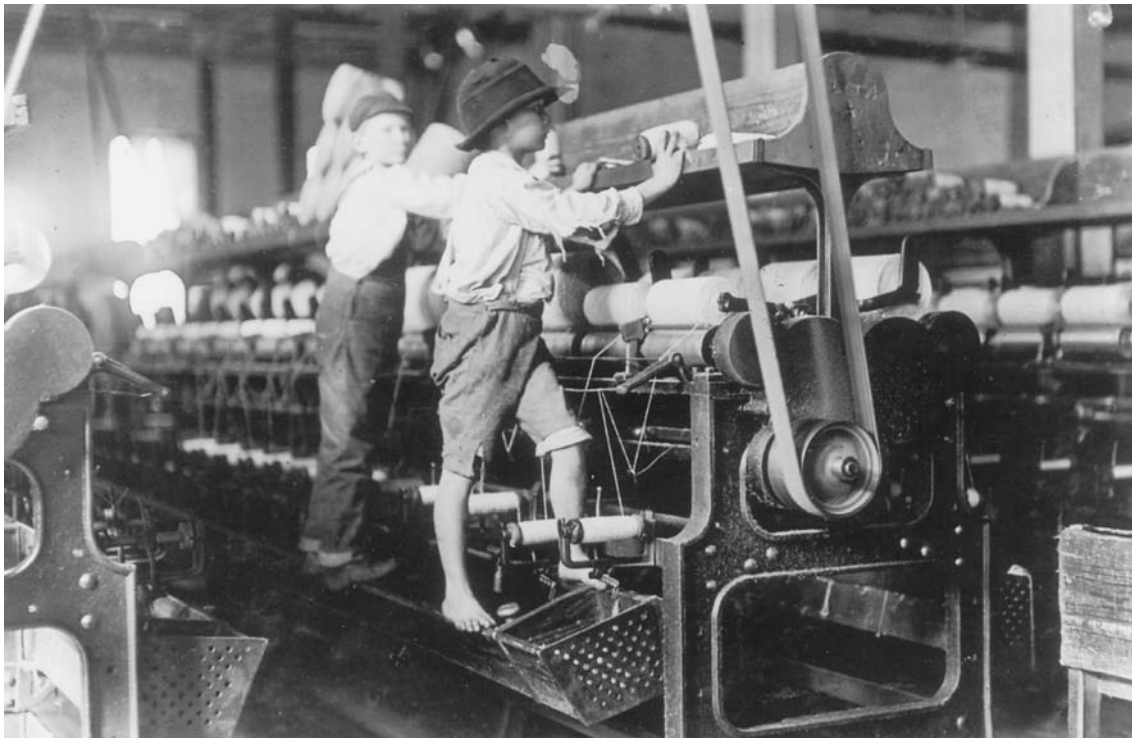
United States Bureau of Education The first federal office created to give Washington a role in American education. Established in 1867 by an act of Congress, the bureau was to have served as a national center, to collect and disseminate information about education. Its first director, however, was HENRY BARNARD, a leader and outspoken advocate of the growing public school movement, which sought to establish universal public education and state-wide public school systems in every state. After he turned the bureau into an advocacy organization for public schools, Congress abolished

the bureau the following year, forcing Barnard to resign and transferring the bureau's data collection functions to a new Office of Education in the Department of Interior. In 1953, the office became part of the new Department of Health, Education and Welfare. In 1979, Congress created the U.S. DEPARTMENT OF EDUCATION, an executive department headed by a cabinet-level secretary.

United States Children's Bureau A federal office established by an act of Congress in 1912 to collect and disseminate information on "all matter pertaining to the welfare of children and child life" in the United States. Headed by JULIA LATHROP, the bureau aggressively gathered data on infant mortality, birth

rates, orphanages, juvenile justice, desertion, accidents and diseases of children and child labor, in the belief that the collation and presentation of facts would force reform.

Establishment of the bureau was the result of 10 years of lobbying by the NATIONAL CONGRESS OF MOTHERS, PARENT-TEACHER ASSOCIATION, and a network of women from the SOCIAL SETTLEMENT movement who had helped found the National Child Labor Committee to try to outlaw CHILD LABOR. Lathrop had been a resident of Hull-House and was a close friend and associate of social activists Jane Addams, FLORENCE KELLEY and LILLIAN D. WALD. Once in office, Lathrop's investigation of infant mortality led to the establishment of uniform birth registration procedures. The bureau's subsequent



The United States Children's Bureau exposure of factory exploitation of young children led to the passage of the first federal child labor law in 1916. (*Library of Congress*)

studies of child labor led to enactment of the first federal child labor law in 1916. Lathrop formed the Child Labor Division within the bureau to enforce the new law and named a former Hull-House resident, Grace Abbott (1878–1939), to head it. When Lathrop retired in 1921, Abbott took charge of the entire Children's Bureau and managed it for the next 13 years.

In 1918, the Supreme Court declared the child labor law an unconstitutional infringement on personal rights of children to work, but the bureau and its Child Labor Division continued to expose the outrages of child labor. A year before she left the bureau, Abbott succeeded in getting Congress to raise the minimum age for workers in most industries to 16 (to 18 in hazardous industries) as part of the National Industrial Recovery Act of 1933. Raising of the minimum working age had an immediate and widespread impact on education, forcing public schools across the United States to expand to accommodate a huge influx of new students who had formerly gone to work, sometimes as young as five. Southern industries, mines and farms had been especially dependent on child labor and had stalled formation of the Children's Bureau in the early 1900s and then successfully led the court battle that overturned the first federal child labor law in 1916. Their eventual agreement to a higher minimum working age came only after the mass unemployment of adult workers during the Great Depression of the 1930s began threatening the internal security of the republic. By eliminating children from the work force, Congress hoped to open up more jobs for adult workers.

In addition to its role in combating child labor, the Children's Bureau had a dramatic effect on child-rearing methods in the United States. This educative role was the result of three pamphlets it published, all written by Mary Mills West: *Prenatal Care* (1914), *Infant Care* (1915) and *Child Care: The Preschool Age*

(1918). Together, the three pamphlets helped modernize child-rearing methods. The 41-page *Prenatal Care* taught mothers—especially immigrant mothers from other societies—the necessity of “perfect cleanliness” and the importance of putting oneself under the care of a doctor as early in pregnancy as possible. It also advised women to have their children delivered at hospitals, by doctors, instead of at home, by midwives, friends or relatives, as was common in that era. Covering all aspects of prenatal care, from the first signs of pregnancy to nursing the baby, the pamphlet asserted that “the first duty of every mother” was to nurse her baby, because “mother's milk was the perfect infant food.”

Infant Care also stressed cleanliness and the duty of mothers to nurse their babies, and it offered 87 pages of instruction on food, clothing, training, discipline, health and hygiene. *Child Care: The Preschool Age* was 88 pages long and instructed parents on health, hygiene, food, clothing, exercise and play, discipline and education. It broke new ground by explaining that play was “a fundamental instinct” and “the foundation for a healthy adult life.” The booklet urged parents to abstain from harsh punishment and suppression of children's basic instincts. It called the patient answering of children's constant questions “boundless opportunities [for parents] to lay the foundations of a broad and practical education.” Although the first and last pamphlets had respectable circulation, *Infant Care* became one of the most influential publications in the history of American publishing. From the time of its issue, demand was unprecedented. By 1955, circulation had reached 35 million, making it the most widely circulated government publication in history, surpassing even the most widely circulated Department of Agriculture bulletins. By 1961, the total had reached 45 million, and by 1972, 59 million. Only the arrival of Dr. BENJAMIN SPOCK's *Baby and Child Care* in 1946 began to slow its distribution and

gradually displace it as the most influential publication on child care.

One reason for the popularity of *Infant Care* was the constant updating by Children's Bureau researchers to keep the booklet abreast of the latest developments in child-care research. The original *Infant Care* urged teaching good habits through obsessive regularity, with the infant to be fed, bathed and put to sleep at the same time each day. Crying—especially after the infant was put to bed—was to be ignored. Parents were to begin toilet training infants in their third month, and they were not to tolerate thumb sucking, which the pamphlet called a source of disease. Pacifiers were forbidden, and thumb-sucking was to be eradicated by pinning or sewing the infant's sleeves to prevent its putting its thumb in its mouth. Even more dangerous than thumb-sucking, according to the pamphlet, was the "injurious practice" of masturbation. Moreover, the pamphlet warned that the child was "to know no other way than to do what he is told." Eventually, *Infant Care* relented on most of these proscriptions and subscribed to the child-rearing methods advocated by Dr. Spock.

Although West, the author, had no medical training, she was a widow with five children and had trained as a researcher at the University of Minnesota. In writing the pamphlets, she was careful to reflect the accepted medical advice of the era, and the pamphlet's succeeding editors continued to follow that practice.

United States Coast Guard Academy An institution founded in 1876 to educate and train young men and, since 1975, women to be officers in the United States Coast Guard. Located in New London, Connecticut, since 1932, the academy is a four-year institution offering a full curriculum in the humanities, social sciences, physical sciences and engineering, along with required studies in seamanship and navigation. Professional training at sea is

required in summer aboard the three-master bark *Eagle* and on Coast Guard cutters. Except for a \$3,000 entrance fee, the federal government pays all costs of attending by providing a monthly allowance of \$600 plus a daily food allowance. Unlike the other service academies, the Coast Guard Academy selects cadets from a nationwide competition on the basis of standardized test scores, high school academic performance, participation in extracurricular and community activities and desire to be a cadet. Any physically qualified, unmarried U.S. citizen between the ages of 17 and 20 may apply. Fewer than 20% of all applicants are accepted. All graduates are commissioned as ensigns in the Coast Guard. Total enrollment is about 1,000, of whom 30% are women.

United States Commissioner of Education The chief executive officer of the United States Bureau of Education (later, Office of Education), established by an act of Congress in 1867. Rendered defunct in 1980 by the establishment of the Department of Education, with its secretary a member of the cabinet, the education commissioner was formerly appointed by the president with the approval of the Senate. The first such appointee was Connecticut's champion of public education, HENRY BARNARD, who immediately subverted the role of his office by making it an advocate of universal public education instead of an agency for collection and dissemination of information about American education. A year after his appointment, Barnard resigned the post, and the commissioner and bureau were transferred to the Department of Interior, where the bureau was renamed the Office of Education. In 1953, the office and its commissioner were transferred to the new Department of Health, Education and Welfare, where they remained until 1979.

United States Constitution See CONSTITUTION OF THE UNITED STATES.

United States Department of Agriculture An executive department of the government that conducts research, maintains service activities and administers regulatory laws in the broad field of agriculture. Created as a small office in 1836 to distribute plants and seeds to farmers, it became a department in 1862 and was raised to cabinet status by Congress in 1889. Its myriad functions have expanded to include research, conservation, forestry, marketing, credit, food distribution, export expansion, production controls, grading and inspection, rural development, and a wide variety of education and education-related programs. Responsible since 1946 for administration of the NATIONAL SCHOOL LUNCH PROGRAM, the department has been a major provider of education to farmers and the men, women and children of farm communities since passage of the SMITH-LEVER ACT in 1914. At the time, American agriculture was in the grip of a self-destructive process that had seen farmers deplete the soil of all its nutrients. Working in cooperation with land-grant colleges, the department established experiment stations and demonstration farms to teach farmers how to use fertilizers and pesticides and how to rotate crops.

The department's efforts to modernize American agriculture were so successful that farms were producing enormous food surpluses when the Great Depression of the 1930s sent prices tumbling and plunged hundreds of thousands of farmers into bankruptcy. The department's services were then reorganized to buy and store surplus foodstuffs and help maintain prices at levels high enough to make farming a viable industry. The department continues to regulate production and prices through a variety of market mechanisms.

The department's educational functions, however, reached well beyond the bounds of commercial agriculture. In the first half of the 20th century, its extension service helped teach several generations of farm women to run their

households efficiently and feed their families at minimum cost by maintaining kitchen gardens and small livestock runs for chickens, pigs and the like. Its huge publications division taught rural adults how to build every type farm structure, how to raise every kind of domestic animal, how to make and repair clothes, cook, preserve foods and conduct every conceivable activity designed to make a person self-sufficient in isolated-rural areas. In addition to adults, the department's educational services reached millions of children through various programs such as the 4-H CLUBS. Ultimately, the department reached tens of millions of rural Americans and helped teach them how to modernize American agriculture and make it the largest revenue producing industry in the United States in the years following World War II—a position it maintained as late as 1960.

In the last decades of the 20th century, the department's educative role declined somewhat as huge "agracorporations" took over the majority of American farmland from small farmers. Since 1900, when nearly half of all Americans lived on farms and ranches, the number of family-owned farms has dropped to fewer than 2 million, and the number of farms dropped from a peak of about 6.8 million in 1923 to just over 2.1 million in 2002. The demographic changes in rural America and the growth of the suburban population forced the Department of Agriculture to revamp its educational programs to include information on home design and maintenance, plant and lawn care, pet care, and the design and maintenance of flower and vegetable gardens. Of far greater import to American education today, however, is the department's role in administering the Special Meal Assistance Program, which provides more than \$7.5 billion a year in breakfasts, lunches and milk to disadvantaged children in schools across the United States.

United States Department of Defense An executive branch of the government charged with directing and controlling the American armed forces and assisting the president in safeguarding the nation's security. Created by the National Security Act of 1947, the department unified all branches of the armed services under a single, central command, with a civilian, cabinet-level secretary at its head. In the area of education, the department is responsible, through its various branches, for administering the various military service academies, the ARMY WAR COLLEGE and the COMMAND AND GENERAL STAFF SCHOOL. It is also responsible for funding more than 150 elementary and secondary schools for about 75,000 students on military bases overseas and about 70 schools for more than 30,000 students on U.S. military bases too remote for children there to attend local public schools.

At the higher education level, the department underwrites the service academies, the huge Army, Navy and Air Force RESERVE OFFICERS' TRAINING CORPS that provide partial subsidies for college education for thousands of students in return for their subsequent service as officers in the armed forces. It also provides grants to help underwrite the SERVICEMEN'S OPPORTUNITY COLLEGES program that makes two-year and four-year college programs available to more than 250,000 service personnel. Apart from direct spending on education, the Pentagon spends more than \$45 billion a year on scientific research, of which nearly \$2 billion goes to universities and university scientists.

United States Department of Education The cabinet-level executive department charged with administering all federal programs relating to formal education in the United States. Created in 1979, the department is a successor to the Bureau of Education, which was founded in 1867 to gather and disseminate information on education. The Depart-

ment of Education continues to perform that role through its Office of Educational Research and Improvement, which publishes, inter alia, the annual *Digest of Education Statistics*, the most complete publication of statistics on American education. The department has also assumed authority for a variety of educational programs that had been scattered in other executive departments, such as the Departments of Defense, Agriculture, Labor and Justice.

The department dispenses more than 46% (\$57.44 billion) of the \$125 billion spent by the U.S. government on education each year—issuing about \$30 billion in grants to needy college and university students. Among its many responsibilities are enforcement of civil rights and antidiscrimination laws in the educational sector and of school improvement programs to ensure equal access for the disabled. The department is also charged with oversight of vocational programs, of American Indian education, bilingual education, special education, vocational and adult education, of the huge guaranteed student loan program (see STUDENT LOANS) and of the sweeping national education reform movement arising out of the GOALS 2000 program and the NO CHILD LEFT BEHIND ACT OF 2001 (NCLB). The department has far-reaching administrative functions, including administration of U.S. Department of Defense dependents' schools; the National Institute of Education; the National Center for Education Statistics; the Fund for the Improvement of Secondary Education and the Institute for Museum Services. The department has indirect oversight of four special institutions: Howard and Gallaudet Universities, the National Technical Institute for the Deaf and the American Printing House for the Blind.

Almost since its creation, the department has been under attack. When Ronald Reagan assumed the presidency in 1981, he pledged to abolish the department and return its various functions to the agencies that had originally

controlled them. He had support from a not inconsiderable number of conservative constitutionalists and educators who pointed out that the framers of the Constitution specifically left control of education to the states. By failing even to mention the word *education*, the Constitution delegated absolutely no authority over education to the federal government. The department had been a result of a campaign pledge by Jimmy Carter to the NATIONAL EDUCATION ASSOCIATION in return for its support in the 1976 presidential election. It was Congress, however, that created the department and passed the various laws establishing the programs and institutions that it now controls. Interestingly, President Reagan wholeheartedly approved and signed into law the Education of the Handicapped Acts of 1983 and of 1986, which extended the EDUCATION FOR ALL HANDICAPPED CHILDREN ACT OF 1975 and led to the federal government's deepest incursions into public school education. The two laws forced public schools across the United States to admit and provide appropriate education (and physical access to school facilities) for more than 1 million handicapped children who, until then, had been excluded. Since then, under NCLB the department has invaded almost every American classroom with the NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS testing program, which regularly measures academic proficiency of fourth, ninth and twelfth graders in public schools across the United States.

United States Department of Health, Education, and Welfare (HEW) A now-defunct cabinet department that included the Office of Education. Created in 1953, HEW's constituent elements grew too large to administer efficiently in a single department. In 1979, Congress authorized a reorganization that converted the Office of Education into the autonomous DEPARTMENT OF EDUCATION the following spring. HEW was renamed the Department of

Health and Human Services, which nonetheless retains administrative control of \$27 billion in educational programs, including the \$5.6 billion-a-year HEAD START program and \$21.5 billion in research and development programs in colleges and universities.

United States Department of Labor An executive department of the federal government, headed by a cabinet secretary and created by Congress in 1913 "to foster, promote and develop the welfare of the wage earners of the United States, to improve their working conditions and to advance their opportunities for profitable employment." Among its myriad agencies are several directly related to education, including the Employment and Training Administration, which oversees job training and placement programs. Its Bureau of Apprenticeship and Training, created under the National Apprenticeship Act of 1937, establishes and promotes industry standards for on-the-job training and provides official accreditation of state standards that match its own. Most states have adopted the bureau's apprenticeship training standards.

In 1965, Congress expanded the Labor Department's role in education by establishing the JOB CORPS to enhance skills of disadvantaged young men and women between the ages of 16 and 24. A \$1.5 billion-a-year residential program, the Job Corps sends needy high school dropouts and unskilled students from economically depressed areas to live away from home at more than 100 urban and rural centers, where they receive basic academic and vocational training, counseling and job placement assistance.

In 1973, Congress assigned the department another educational function by creating the Comprehensive Employment and Training Act (CETA), which authorized the department to establish training and job opportunities for the unemployed, the disadvantaged and the under-

employed whose skills or jobs had been rendered obsolete by automation and advanced technology. CETA also provided more than 1 million summer jobs for disadvantaged youths aged 14 to 21. Still another education function of the department is the certification of sheltered workshops for the handicapped.

United States Department of State A cabinet-level executive department created in 1789 to implement the president's foreign policies. Its Office of Overseas Schools supports American international schools abroad both academically and administratively through a variety of services. These include sending consultants to visit such schools to ensure that they keep their curricula and student counseling and college advisory services attuned to those of comparable schools in the United States. American international schools are private institutions offering American-style education, from grades K-12, to children of American civilians living overseas.

United States Merchant Marine Academy A publicly supported, four-year institution of higher education offering maritime, military and engineering programs to train officers for the United States merchant marine and the maritime industry in general. Administered by the United States Maritime Commission, the academy was founded at King's Point, New York, by President Franklin D. Roosevelt in 1943, after attacks by German and Japanese ships forced the United States to arm its merchant fleet for carrying troops and supplies overseas. Roosevelt's goal for the institution was to provide merchant ships and the transportation industry with a corps of well-trained professional officers, adept at commanding ships in peace as well as war.

Applicants to the academy must be nominated by a member of Congress. They must be U.S. citizens between the ages of 17 and 25 and

in excellent physical condition. Once admitted, they must take a core curriculum of mathematics, science, English, humanities, history, naval science, physical education, ship's medicine and computer science. Students must also pass summertime sea-project courses while living aboard ship, and then must pass the U.S. Coast Guard licensing and certification examination. They must spend five months at sea on U.S. flagships during their junior and senior years and serve five years on a merchant vessel and eight years in the Naval Reserve after graduation. Upon graduation, students receive a bachelor of science degree and a license as a deck officer, an engineer or a dual officer.

With fewer than 1,000 students, the need for the academy has come under question since a massive downsizing of the U.S. merchant fleet from 2,000 ships in 1945 to only 350 by 2000. Only 190 of them are government-owned. Although the government held about 400 vessels in the so-called Ready Reserve Fleet and Sealift Command for emergency operations, many are obsolete and deteriorating from nonuse. Moreover, five coastal states—California, Maine, Massachusetts, New York and Texas—have SEA-GRANT COLLEGES that duplicate the training of the academy, and many congresspeople question whether the federal government should continue underwriting the cost of training officers for private industry.

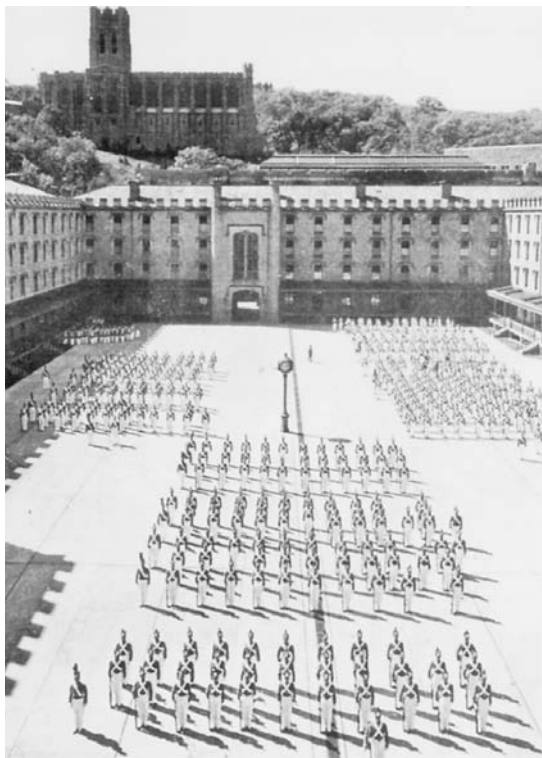
United States Military Academy The national military college for soldiers at West Point, New York. Operated by the Department of the Army to educate and train young men and women to be officers in the United States Army, West Point was founded by Congress in 1802 and became the first school of engineering in the United States. It admitted its first women cadets in 1976. All cadets must study a rigorous four-year curriculum in engineering, military science, the social and natural sciences and the humanities. Military training

is conducted during summer sessions. Upon graduation, cadets receive the B.S. degree and commissions as second lieutenants in the regular Army, where they must serve no less than five years.

Cadet corps strength reached nearly 4,200 in 2004, with 635 female cadets accounting for just over 15% of the total. Candidates for admission must be U.S. citizens and at least 17 but not yet 22 years old on the day of admission. (Qualified young men and women from allied nations are also admitted under special conditions.) They must be physically fit, of high moral character and have demonstrated superior academic skills in school and on standardized college entrance examinations. Quali-

fied students with a deep desire to become a cadet must obtain a nomination by contacting their congressperson. Five nominations each are allocated to the vice president, every senator, every representative and the congressional delegate from the District of Columbia. Territorial governors may each make one nomination, and the resident commissioner of Puerto Rico may make six. Military service nominations are distributed as follows: president, as commander in chief, 100; members of the regular army and members of the army reserves, 85 each; graduates of certain types of military and naval schools (called honor military schools) and Reserve Officers Training Corps, 20; children of deceased or severely disabled veterans, 10; children of Medal of Honor winners, unlimited (although there are few such candidates).

Nearly 13,000 students apply each year, and only about 1,600 are accepted. Tuition, room and board are paid by the federal government, which also provides students with a monthly stipend for books, uniforms and personal expenses. The unique curriculum and system of training at the academy was the work of SYLVANUS THAYER, who was appointed superintendent of the academy in 1817, after spending two years in Europe on behalf of the government to study military education and defense systems. Thayer's influence over the next 18 years converted the academy from a military drill school into a superior educational institution. Thayer expanded the science and arts curriculum and introduced engineering as a science, making that department the best in the world. He expanded the faculty, added courses, restructured students into a cadet corps and instituted the tough examinations and rigid student discipline that remain hallmarks of West Point's educational system.



Cadets on parade at the United States Military Academy, at West Point, New York (*Library of Congress*)

United States Naval Academy A four-year college administered by the U.S. Navy to prepare young men and women to be officers in

the U.S. Navy and U.S. Marine Corps. Founded by Secretary of the Navy GEORGE BANCROFT in 1845 as the Naval School in Annapolis, it moved to Newport, Rhode Island, for the duration of the Civil War. Procedures for nomination to the applicant pool are identical to those of the United States Military Academy. Of the 4,200 students, 600 are women. The Navy pays for tuition, room and board and medical and dental care of students and provides midshipmen with a salary to cover the cost of uniforms and supplies and other expenses. In addition to wide-ranging studies in the liberal arts and sciences, students receive professional training in aviation, engineering and various military, maritime and technical fields. Candidates must be nominated under the same process as applicants to the UNITED STATES MILITARY ACADEMY. Graduates must serve five years in the U.S. Navy.

United States Office of Education A federal agency and forerunner of the Department of Education, originally founded as the Bureau of Education in 1867 to gather and disseminate statistics on education in the United States. The bureau's first commissioner, HENRY BARNARD, proved so strong an advocate of universal public education that he alienated southern cotton planters and northern textile mill owners, who depended on child labor. Within a year, their representatives in Congress emasculated the bureau, turning it into an agency of the Department of Interior, and forced Barnard to resign. Relatively ineffectual for most of the next century, its importance grew as education reached more and more people. Eventually, the office was transferred to the Department of Health, Education and Welfare, and in 1979 it became an independent, executive department headed by a cabinet secretary and renamed the Department of Education.

United States territories Partially self-governing geographic areas under the control of

the United States government but without the status or prerogatives of statehood. The most important territories of the United States are the Virgin Islands of the United States in the Caribbean and Guam and American Samoa in the Pacific Ocean. Puerto Rico was a territory from 1898 until 1952, when its population voted for commonwealth status and self-rule within a framework of U.S. federal laws. American Samoa has more than 100 primary village schools, several dozen public secondary schools, 6 private schools and one community college. Education is compulsory for children aged six to 18. The Virgin Islands have about 70 public elementary and secondary schools, with nearly 30,000 students. Education is compulsory for children 5 1/2 to 16. The University of the Virgin Islands at Charlotte Amalie has an enrollment of nearly 2,000.

United States v. Montgomery County Board of Education A U.S. Supreme Court decision in 1969 establishing racial ratios for teacher assignments in Montgomery, Alabama, public schools. The case was significant as the last of three Supreme Court decisions that effectively ended the massive resistance of states in the South to the Court's 1954 decision in *BROWN V. BOARD OF EDUCATION OF TOPEKA*, which declared racial segregation of public schools unconstitutional. In the two earlier decisions, *GREEN V. COUNTY SCHOOL BOARD OF NEW KENT COUNTY* (1968) and *ALEXANDER V. HOLMES COUNTY BOARD OF EDUCATION* (1969), the Court had outlawed so-called free-choice plans that allowed students to select whatever schools they wanted to attend, and it ordered all public school districts everywhere to end all delays of racial integration and to desegregate schools by the beginning of the following school year.

unit of instruction The smallest subdivision of a subject or course, consisting of a specific problem or topic or group of closely

interrelated problems and topics. In teacher lesson plans, each unit of instruction is normally accompanied by a carefully outlined instructional approach and associated student exercises. Thus, at the simplest level, a unit of instruction in beginning mathematics might consist of adding pairs of single-digit numbers in every possible combination. A breakdown of instruction into units is considered essential to the development of a logical sequence in the learning process, with each successive unit directly tied to knowledge accumulated in the previous unit.

university An all-encompassing institution of post-secondary education and research, usually consisting of one or more four-year undergraduate schools, or colleges, which confer bachelor's degrees, and one or more graduate and professional schools, which confer master's degrees and doctorates. The university can trace some of its roots to the academies of ancient Greece and similar institutions that emerged in Babylonia, Persia and Arabia, between the sixth century B.C. and the ninth century A.D. In 859, Al Qarawiyn University was established at Fez, Morocco, and in 970, Al-Azhar University opened in Cairo. At the end of the eighth century, Charlemagne brought the cleric and educator Alcuin of York to Aix-la-Chapelle (Aachen) to establish a palace school. Alfred the Great, himself a scholar, turned his palace into a center of learning in Britain about a century later and ordered monks to expand the educational function of their monasteries. At the same time, the Moors swept into Spain and reopened what had been a Roman university at Cordoba, which became a center of philosophy and brought to Europe the long-lost works of Aristotle, Justinian, Galen, Hippocrates, Euclid and Ptolemy.

Beginning in the 12th century, the university movement spread northward into Europe proper. Northern universities in Paris, Oxford

and Cambridge tended to be organized and administered by professors, while southern universities, such as the one in Bologna, Italy, were run by students. University students largely came from elite families who could afford to allow their children to spend their time learning—usually in preparation for the learned professions, that is, medicine, law and the church. The embryonic university was usually formed by theological scholars, philosophers, teachers of law and teachers of medicine, who formed groups analogous to medieval tradesmen to protect their interests and establish standards for their professions. When these standards obtained recognition either from a pope or king or by general consensus, they earned the title *studium generale*, or center of learning for all. Oxford emerged as a *studium generale* by the end of the 12th century, and Cambridge followed suit in 1209. As early university course offerings expanded to include grammar, arithmetic, music, geometry, astronomy, natural, moral and mental philosophy, medicine, theology and civil and canon law, the institution widened its scope to universal proportions and earned the name university, derived from the Latin *universitas*, meaning universe. In the Middle Ages, it came to mean society, guild or corporation and was applied to academic institutions, or *universitas magistrorum et scholarium*. Within each university, smaller colleges formed, often as common living quarters (the university offered no housing or maintenance), and individual colleges began to specialize in particular areas of study, attracting student masters with similar scholastic interests.

Like its English predecessors, the first college in America, Harvard, was founded in Massachusetts in 1636 for the specific purpose of training ministers of American Puritanism. Yale followed suit 65 years later. In founding Harvard and Yale, New Englanders were trying to strengthen their church and produce the spiri-

tual and intellectual leadership needed to help them create a “promised land” amid inhospitable surroundings. The ministers who emerged from such colleges also served as local instructors of the young, teaching them to read, write and calculate, as well as learn the catechism.

In the mid-18th century, however, a new generation of practicalists emerged, insisting that universities leave lessons of the heavens to the church and concentrate on teaching young men the practical skills and crafts to survive on Earth and carve out a new nation from the American wilderness. To this end, Benjamin Franklin founded Franklin’s Academy in Philadelphia (later, the College of Philadelphia, and now, the University of Pennsylvania). Not a word of theology was taught. A generation later, in 1819, Thomas Jefferson founded the University of Virginia. Like Franklin, he omitted theology and offered students the opportunity to choose from a broad curriculum in eight different “schools” that were comparable to modern “majors.”

In New England, tiny Amherst College, in Massachusetts, pioneered the shift in college curricula from classical to practical education after Amherst science and mathematics professor JACOB ABBOTT prodded the faculty to add a new academic program with “a more modern and national aspect” than the traditional curriculum. Requirements for admission—competence in Greek and Latin—remained unchanged, and the four-year classical and scientific course leading to the bachelor’s degree continued to be offered to those who sought such a curriculum. To satisfy “the taste and future pursuits of a large class of young men,” however, Amherst added a new curriculum of liberal education, which unfortunately offered no degree as an incentive. It substituted French and German for Greek and Latin and added more courses in English literature, modern history, civil and political law and the natural sciences. In addition, Amherst added two new

departments: one, for science and the art of teaching, was to train schoolmasters; the other offered theoretical and practical mechanics that would not only “afford exercise and amusement to many of the students,” but also be profitable to the school by “keeping all the buildings and furniture in constant repair.” Introduced in 1827, the radical new curriculum produced a rush of initial interest—until students learned that it did not lead to the degree that had become so essential to postcollegiate success. Although Amherst abandoned the program in 1829, it did not go unnoticed by other educators. Harvard and the University of Vermont reorganized their curricula into departments and permitted students a wider choice of subjects. Union College, in Schenectady, New York, did much the same, adding more courses in modern languages and the natural sciences.

All, however, represented modest reforms compared to those that were under way at Brown University, the University of Nashville and the University of Michigan. At Brown, FRANCIS WAYLAND had taken over the presidency in 1827, following several years of riots by students demanding an expanded curriculum and more freedom to choose what they might study. Over the next two decades, he introduced “that kind of education which will be of the greatest use to . . . the prosecution of useful industry.” A strong believer in the free-market economy, Wayland sought to adapt Brown’s curriculum “to the wants of the whole community” by expanding the traditional curriculum to include chemistry, physics, geology, English language and rhetoric, political economy, history, law, the science of teaching, the principles of agriculture and a wide range of arts. In addition to expanding the curriculum to meet the needs of society, Wayland sought to open Brown to all classes of society and offer students a choice of programs, courses and educational goals.

In Nashville, meanwhile, Philip Lindsley (1786–1855) was trying to reorganize Cumberland College into the University of Nashville, which he hoped to make into the keystone of a complete system of formal education in Tennessee, from infant schools through colleges, universities and professional schools of law, divinity, medicine, military and naval science, agriculture and architecture, with each branch of learning taught to an appropriate degree at each educational level. The university was to be “the means of teaching all the sciences, and everything, indeed, which it is desirable for any man to know.” Its libraries would contain “one or more copies of every valuable book extant in any language, ancient or modern,” and its laboratories would contain “specimens, living or preserved, of every vegetable and animal and mineral, peculiar to the earth, the air and the waters of our planet.” He called for expansion of the university to include botanical gardens, astronomical observatories, models of machines and useful inventions and works of the noblest artists (or reproductions thereof). Lindsley’s model of the university differed from Wayland’s in that it offered the widest possible education regardless of market demand.

A third model for university reform came from the University of Michigan, whose president, HENRY PHILIP TAPPAN, proposed a comprehensive system of education for the entire state—not unlike the one proposed by Lindsley in Tennessee—concerned as well with extending “the boundaries of human knowledge and understanding” through research. It was the element of research that made the Tappan model unique.

As it turned out, none of the three would-be reformers lived to see his vision incorporated into lasting, working institutions. Although Brown adopted Wayland’s reforms in 1851, his successor abandoned them as too impractical. Lindsley, meanwhile, was unable to raise the

funds needed to transform Nashville into a university, and in Michigan, the regents forced Tappan to resign in 1863. Nevertheless, the reforms envisioned by Wayland, Lindsley and Tappan would eventually be adopted by every major American university. The demand for practical skills gradually relegated theology to a minor role at most universities. Even the most traditional colleges, such as Yale, Harvard and Princeton, eagerly expanded into larger, more universal institutions. To that end, they began to found or combine with law schools and medical schools. They also expanded departments such as mechanics (engineering), which in turn became separate schools or colleges within the university.

The modern university is a conglomerate of disassociated schools, each often housed in its own building and teaching courses unrelated to those in other schools. Their affiliation to a central umbrella institution provides many theoretical advantages unavailable to any of the individual units acting singly. Chief among these is the reduction in administrative costs, with a single president, vice president, treasurer, secretary, bursar, registrar and staff to handle the bureaucratic functions of all divisions including fund raising. The dean of each school is then—again, in theory—freed to tend to curricular and academic affairs. A second source of enormous savings is derived from the sharing and multiple use of physical facilities, such as classrooms and laboratories that might otherwise remain underutilized.

The first practical model for the modern American university originated in October 1869, when the new, 35-year-old president of Harvard, CHARLES W. ELIOT, delivered his inaugural address. Considered a turning point in the history of American education, the address outlined a new scheme for a quintessentially American university. Within 20 years, he had accomplished his goals, separating and expanding the law department into a proper law

school and the medical department into a medical school, each with its own faculty, granting professional, postgraduate degrees after completion of a much expanded and far more rigorous curriculum. Divinity studies moved into their own separate graduate school. Undergraduate studies were also expanded, with the sciences incorporated into the core curriculum required for a bachelor's degree. In 1872, he established a graduate school of arts and sciences, offering master's and doctoral degrees, and in all these schools, a system of rigorous examinations was introduced as a requirement for graduation. By 1894, 25 years after taking office, Eliot had created the prototypical American university. Columbia, Princeton, Yale and, soon, most other independent universities followed the example of Harvard.

In the century that followed, universities evolved in ways that Eliot and his disciples at other universities could never have imagined. At the time Eliot took charge of Harvard, total enrollment of the university was 500, with a faculty of 23. When Nicholas Murray Butler joined the Columbia faculty in 1885, there were only 200 students; even after student ranks increased tenfold under his presidency in the early 1900s, he never faced the sort of explosive expansion that changed the complexion of universities following World War II.

From 1947 to 2005, total enrollment in institutions of higher learning climbed from 2.3 million to nearly 17 million students. Their arrival overwhelmed most campuses, forcing huge physical expansions. Separate buildings were needed for a host of new graduate schools. Many undergraduate departments grew too large to share facilities with other departments. Some needed their own, new, separate buildings, with specialized facilities and equipment, such as laboratories and interactive computers. Moreover, the university curriculum had mushroomed unexpectedly, from fewer than 100 courses in the late 19th century, to well over

100 majors, with several thousand courses, a century later (see Appendix B).

No longer was a single central registrar, bursar or other administrator able to cope with the needs and demands of faculties and students from so many far-flung departments and graduate schools. At the typical large university, each graduate school gradually assumed responsibility for its own administration, establishing, in effect, a separate institution that shared only the streets, pathways, a few library services and a university president. The result was an organizational anarchy that saw each graduate school take charge of its own finances, tuition collection and fund-raising and share little with the central university or its undergraduate college. Operating like geographically connected but independent city-states, graduate schools at some universities succeeded in building prosperous institutions, while core, undergraduate institutions faltered and accumulated substantial operating deficits. Indeed, many undergraduate colleges were forced to revert to 19th-century LANCASTERIAN SYSTEMS originally designed to educate poor children in orphanages by using unpaid older students to teach their younger inmates. The modern universities modified the system somewhat by hiring low-paid graduate students, with no teaching experience, to teach undergraduate students in lieu of high-salaried professors, whose time the graduate schools monopolized.

Many question whether the university, as conceived by Eliot, may now be so unmanageable as to warrant a Balkanization of its individual units, with a return to the 19th-century system of independent undergraduate and graduate colleges. That concern reached a peak in 1994—ironically at Harvard, whose president, the Renaissance literature scholar Neil L. Rudenstine, was forced to take a leave of absence because of “severe fatigue and exhaustion.” Social scientists reacted quickly, calling any university presidency “a nearly impossible

job," because of the conflicting constituencies. Famed social scientist David Riesman explained that faculties had become "unreasonable" and that students had changed radically, from passive vessels to active consumers. In addition to the frustration of mediating conflicts between the university's various constituencies, university presidents like Rudenstine also faced the impossible task of traveling across the face of the nation raising billions of dollars in contributions—more than \$1 million a day at Harvard—to cover operating deficits and costs of maintenance and repair of huge, aging infrastructures. At least some of the deficits, however, can be traced to spiraling salaries, benefits and bonuses paid to university faculty and administrators. To compete with private industry, some universities had raised presidential salaries to more than \$1 million a year and salaries of some graduate school professors (particularly at law and medical schools) to similar heights, while raising costs of tuition, room, board and mandatory fees at some private universities to almost \$50,000 a year.

university curriculum The curriculum, or courses, offered at a university. Once limited to theological studies and classical studies and numbering several dozen courses, university curricula have undergone an explosive expansion over the last two centuries. The practical and social needs of the latter half of the 20th century forced American colleges and universities to add thousands of courses leading to degrees in several hundred majors, ranging from accounting to zoology. They include virtually every imaginable vocational, preprofessional and professional area, as well as the liberal arts, the sciences and the social sciences. Depending on the college or university, the level of study in various courses may range from elementary, as in beginning foreign-language courses, to doctoral-level research and independent studies. (Appendix D lists the

more than 100 undergraduate majors now available at accredited American colleges and universities.)

university extension movement A 19th-century shift in the goals of major universities from educating the wealthy elite to servicing society at large by offering access to education to any and all who wished to avail themselves of it. The movement began at Oxford and Cambridge universities in England in the 1850s and 1860s, after critics attacked the publicly supported institutions for their self-imposed isolation from the rest of society. The institutional CHURCH and the SOCIAL SETTLEMENT were two responses to such criticism, but a third response came in 1867, when scholars at Cambridge began offering courses to local groups of working men and women, including lawyers, ministers and teachers.

The informal offerings soon developed into a formal series of lectures, syllabi, homework assignments, discussions and examinations that university authorities eventually organized into an adult-education curriculum leading to university credits. By 1875, Cambridge was enrolling more than 7,000 students in extension courses. Oxford followed suit and by 1887 was enrolling about 13,000 students. The movement immediately spread to the United States, where the American Society for the Extension of University Teaching, in Philadelphia, organized similar programs at various local schools, colleges and universities. The University of the State of New York quickly emulated the Philadelphia example, and the Association of College Alumnae (later, the American Association of University Women) organized similar programs in Indiana.

University extension did not become a formal university program in the United States until William Rainey Harper and John D. Rockefeller drew up plans to open the University of Chicago in 1890. Believing that the university

was the “keeper” of democracy and had a responsibility to disseminate knowledge to the widest possible audience, Harper included an aggressive, autonomous extension division, with its own faculty, into his initial plans for the new university. The division was to be organized into six departments offering, respectively, lecture study, classroom work, correspondence study, books and publications, examinations and teacher training for the extension division. Although it never materialized as Harper had planned, it nevertheless served as the basic for a sizable number of correspondence courses and became a model for other universities, such as the UNIVERSITY OF WISCONSIN and the University of Kansas, to use in establishing important extension programs in agriculture for local farmers. The University of Wisconsin so expanded the Harper model as to become the world’s preeminent university in terms of outreach to the general public and service to the community.

By the beginning of World War I, the university extension program had become an integral part of American higher education, with scores of colleges and universities offering correspondence courses, lecture courses, short courses, club study, training institutes, community forums and library service programs. Columbia University had 2,000 adult students attending its extension courses for credit. Pennsylvania State University had 4,800 students enrolled in correspondence courses leading to B.A. degrees. The University of Michigan boasted an enrollment of 70,000 men and women at more than 300 lectures in its extension program.

In the 1990s, the university extension movement expanded in logarithmic proportions, with the development of DISTANCE-LEARNING programs that allowed millions of Americans to use home computers and the Internet to access university classrooms at more than 5,000 institutions of higher education.

university finances The revenues and expenditures of institutions of higher learning. These differ somewhat between public and private institutions, with the former on average obtaining more revenue from government sources than from students and private sources. Here is a comparison of the percentage of revenues received from various sources by public and private institutions for a typical academic year:

Revenue Source	Public	Private
Student tuition and fees	18.1	38.1
Federal government	11.2	16.3
Appropriations	1.0	0.35
Grants and contracts	9.7	8.4
Research and development centers	0.5	5.2
State governments	35.6	1.3
Appropriations	31.9	0.2
Grants and contracts	3.8	1.1
Local governments	4.0	0.6
Appropriations	3.2	.0
Grants and contracts	0.8	0.6
Private gifts, grants and contracts	5.1	19.3
Endowment income	0.8	5.2
Sales and services	21.7	4.2
Educational activities	2.8	0.5
Auxiliary enterprises (ticket sales, etc.)	9.3	10.6
Hospitals	9.5	8.7
Other	3.7	5.1

Source: U.S. Department of Education

In the 1990s, university and college financing began to incur increasingly large deficits. On the one hand, returns on endowment investments began declining just as most institutions had to raise faculty and administration salaries to compete with private industry. Salaries of some university presidents surpassed \$1 million a year, while some medical school professors were earning as much or more. Most universities compensated for rising faculty salaries by hiring more TEACHING ASSISTANTS—graduate students—to teach undergraduate courses

for modest stipends, usually equivalent only to their own graduate school tuition costs. In addition, some schools instituted far-reaching, cost-cutting programs that included cuts in student aid, reductions in the number of courses offered (and, therefore, the number of faculty) and reductions in the number of sports and extracurricular activities.

university-in-the-school A SCHOOL-COLLEGE PARTNERSHIP to which a college or university sends its own instructors, or trains high school instructors, to teach freshman-level college courses for college credits to advanced high school students in their own high school.

(See also EARLY COLLEGE; PROJECT ADVANCE.)

University Microfilms A widely used commercial printer of doctoral dissertations and other scholarly works, in accordance with the standard presentations and formats for such documents as required by almost all American colleges and universities. Dissertations submitted to University Microfilms, which was acquired by Xerox Corporation in 1972, are microfilmed and available for purchase in both abstract and complete form. Most universities require that completed dissertations be submitted to and published by University Microfilms after presentation for inclusion in the student's university library. In 1973, University Microfilms published the *Comprehensive Dissertation Index, 1861-1972*, a 37-volume compilation of more than 400,000 abstracts of 400,000 available dissertations, and the company continues to update the index with annual supplements. Before the advent of computer technology, the company stored each dissertation on microfilm, which it distributed to libraries and which libraries could reproduce into full-sized manuscripts.

University of California One of the world's largest university complexes, with more than 7,000 faculty serving more than 160,000 stu-

dents in 565 baccalaureate, 250 master's and 200 doctoral programs on campuses at Berkeley, Davis, Irvine, Los Angeles, Riverside, San Diego, Santa Barbara and Santa Cruz. State-run, it represents one of three levels of higher education in the state of California, which also operates 22 California State University campuses for about 350,000 students not academically qualified to enroll at the nine University campuses and 110 two-year community colleges, with a total enrollment of more than 1.5 million students.

(See also CALIFORNIA.)

University of California Regents v. Bakke

One of the most complex U.S. Supreme Court cases in the history of American higher education. Handed down in 1978 by the narrowest possible, 5-4, majority, the case dealt with a charge by Allan P. Bakke, a 38-year-old white engineer, that the University of California Medical School had rejected him because of his race. In effect, Bakke charged he had been the victim of "reverse" racial discrimination. At the time, universities and other American organizations were desperately attempting to comply with AFFIRMATIVE ACTION laws and executive orders passed in the 1960s and 1970s requiring them to broaden the racial and social composition of their organizations to compensate for historic discrimination. In accordance with its affirmative action plan, the University of California's medical school at Davis was then reserving 16 of 100 places in each year's freshman class for minority students. Bakke had twice been rejected when he charged the school with violating both his Fourteenth Amendment right to equal protection under the law and his rights under Title VI of the 1964 CIVIL RIGHTS ACT, outlawing all discrimination based on race, color, religion, sex or national origin.

The two-pronged approach was unique, and the U.S. Supreme Court decided to address the issue after California courts had handed

down conflicting decisions. There was little question that the concept of affirmative action was in conflict with both the Fourteenth Amendment and Title VI of the Civil Rights Act, yet no one on the Court doubted the necessity and justice of affirmative action. The Court walked a legal tightrope in handing down what was, in effect, a two-part decision that attempted to redress Bakke's legitimate grievances, while leaving affirmative action and the Civil Rights Act in place. What the Court did, on the one hand, was to uphold the legality of affirmative action programs because of the diversity they provided student bodies at schools such as the University of California. On the other hand, it struck down the use of fixed numerical quotas, and it ordered the medical school to admit Bakke, adding that he had been barred solely on the basis of race, in violation of Title VI. The justices ruled, however, that schools could take race or ethnicity into account in admitting students, so long as no predetermined, fixed quota was in place or used as the basis for admission. In effect, the Court left all the laws in place, while gaining Mr. Bakke admission to medical school and, eventually, helping him obtain his M.D.

The *Bakke* case had far-reaching long-term consequences, setting off a plethora of similar cases across the United States. Together, they so eroded affirmative action policies that, by 2000, affirmative action in higher education was disappearing. In 1996, the people of California voted to ensure its disappearance by overwhelmingly approving a referendum to ban use of racial and gender-based preferences in admissions to public colleges and educational institutions, as well as in government hiring and contracting. After a federal court upheld the constitutionality of the ban the following year, other states, including Maine, Mississippi, Texas and Washington, followed California's example by imposing legislative or court-ordered bans on affirmative action programs in college admissions and financial aid. After years of court-

ordered desegregation, Boston ended affirmative action in its admission policies at the Boston Latin School, a prestigious public high school and one of the nation's leading "MAGNET SCHOOLS" for gifted students. Reversing all previous court decisions, a federal appeals court ordered an end to affirmative action as a form of reverse discrimination, and it extended the new ban on affirmative action to all areas under its jurisdiction—namely, Maine, Massachusetts, New Hampshire, Rhode Island and Puerto Rico. Virginia schools embraced the Massachusetts decision and immediately acted to end affirmative action. In 2001, the City University of New York adopted the admissions policy of academically selective four-year colleges, by admitting students based solely on academic merit—that is, high school grade-point averages and standardized test scores. California's public universities replaced affirmative action with a policy of admitting every student—regardless of race—who graduates in the top 4% of his or her high school class. Texas public universities admitted the top 10%; Florida the top 20%.

University of Cambridge The second oldest university in England, six of whose 31 independent colleges emerged from monasteries and affiliated schools in the 13th and 14th centuries. Cambridge, like the University of Oxford, was instrumental in serving as a source of educators for the early American colonies: John Harvard, who helped found America's first college in 1636, was a Cambridge graduate, and the Massachusetts city where Harvard University stands today took its name from the seat of Cambridge University. Apart from Harvard, the University of Cambridge, like Oxford, had a direct and far-reaching effect on early American education in providing many ministers, teachers, doctors, lawyers and merchants who came to the colonies in the early 1600s with the training and education that assured the colonies of their ultimate success and stability.

Of the 130 university men who joined the Great Migration of Puritans to New England before 1646, 100 had attended Cambridge and 32 had attended Oxford, with some having attended both. Of the 130, 87 had B.A. degrees, 63 had M.A.s, 98 were ministers, 27 became public officials, 15 became teachers, five entered business, three practiced medicine and almost all were part-time farmers. Forty-three eventually returned to England permanently, but the rest remained and helped renew the strength of the colonies by sending their own sons back to Cambridge and Oxford to bring back still more skills and knowledge to assure the growth of the colonies. It was this second generation of Cantabrigians that was responsible for the building and growth of great institutions such as Harvard.

University of Chicago One of the most unique institutions of higher education in the United States, founded in Chicago in 1890 with \$35 million from John D. Rockefeller and the leadership and vision of educator WILLIAM RAINEY HARPER. Harper was already a renowned adult educator on the SUNDAY SCHOOL and Chautauqua circuits (see CHAUTAUQUA LITERARY AND SCIENTIFIC CIRCLE) when he and Rockefeller developed their plan to build a "Harvard of the West." Unlike the original Harvard, the new university in Chicago was to be egalitarian and disseminate knowledge to as wide a constituency as possible. Harper envisioned adult education, or "extension," as the heart of the new university. His initial plan called for organizing the university into six departments, with regular degree credit available from each upon completion of an examination. Study could be on campus, in the classrooms of cooperating institutions nearby or at home through the first home-study correspondence course ever established by an accredited university. Harper established a new type of academic year for resident students, lasting a full calendar year

and divided into four quarters, permitting those who needed to work to do so or, if they could afford it, to accelerate and finish their degree work in three years.

When Robert Maynard Hutchins became president in 1929, he reorganized the college, replacing the undergraduate college and the single graduate school with a college for general education and four graduate divisions, each devoted to research and advanced study in the social, physical and biological sciences and in the humanities. In addition, he established seven professional schools. Upon admission, undergraduates took placement tests that often reduced their degree requirements. To earn their bachelor's degrees, students had to pass 14 comprehensive examinations in the humanities, social sciences and physical and biological sciences. It made little difference when they passed such exams; if they had enough knowledge to pass them after two years, they did so, and qualified for their degrees. Hutchins banned campus sports at the university because he believed athletics would be a distraction. Ironically, it was a University of Chicago football player who won the first Heisman Trophy as the nation's outstanding college player of the year.

Although students today may still earn advanced standing through placement tests, the college is more conventional, with most students completing four years of undergraduate study. To graduate, students must pass 42 quarter courses, including a core curriculum of year-long sequences in humanities, social sciences, biological and physical sciences, civilization and foreign languages. In addition, two quarters of mathematics, one of art, one of music and one of noncredit physical education are required for graduation. To counter a decline in applications in the early 1990s, the university restored organized sports to campus life, with 10 intercollegiate and 18 intramural sports for men and nine intercollegiate and 18

intramural sports for women. The college now has more than 4,000 undergraduates, about evenly divided between men and women, and the graduate schools have more than 5,200 men and about 3,250 women. The university has graduate schools of business, divinity, law, medicine, public policy and social service administration, and it offers graduate degrees in its divisions of biological sciences, humanities, physical sciences and social sciences. Ironically, lack of applications forced the university to close its famed school of education, founded in 1895 by JOHN DEWEY.

University of Chicago Laboratory Schools

A unique educational institution, where children study subject matter that relates to and emerges from their needs and interests in the world around them. Founded as a single school in 1896 by American educator and philosopher JOHN DEWEY, the school encouraged the intellectual, physical and social growth of children by challenging them to develop independence and investigate the world around them, on their own or in concert with others. Using children's instincts to play, build, cook and create, the school converted each child-instigated game or activity, from playing house to building furniture, into a learning experience that indirectly taught the child to read, write and calculate at remarkably rapid rates. Children emerged from the laboratory school at the sixth grade level nearly two years younger than their public school peers.

The school opened with just 12 pupils (all of them children of University of Chicago faculty or friends) and two teachers from the University of Chicago School of Education faculty. Their approach focused "on discovering how to learn, and on developing a love for learning," Dewey explained. "We believe that education at all levels, from nursery school on, is not simply preparation for life, but an integral part of living. Our students pursue a . . . curriculum

in reading, writing, mathematics and science, and begin in early grades to study foreign languages, music and the arts. In the process of acquiring academic skills, our students learn to be responsible and independent in their studies, and to work and play both on their own and with others." Aside from developing a new approach to teaching and incorporating all the pedagogical advances developed in Europe by JOHANN HEINRICH PESTALOZZI, the Laboratory School was a center of educational research, with its faculty continually developing new teaching techniques by studying the development and learning processes of their students.

Although Dewey and his wife, who was principal for a time, left the Laboratory School in 1904, they developed methods of instruction, collectively called progressive education, that sparked the opening of more than 200 other laboratory schools across the United States. By mid-century, many of the techniques developed at the Laboratory School had been incorporated into standard teaching methods throughout the United States and, indeed, much of the Western world. Dewey's original school eventually developed into three units, from preschool through high school. Still a remarkable school, with seven buildings on an 11-acre campus, the Laboratory School maintains a nursery school/kindergarten for almost 300 three-, four- and five-year-olds in eight sections, with a pupil-teacher ratio of 1:8. The lower, or elementary, school has about 450 pupils attending first through fourth grades. Grade levels are organized into home rooms of about 25 students in each, and each room is a self-contained classroom equipped with specialized learning areas for each subject. The middle school has between 450 and 500 fifth, sixth, seventh and eighth grade students, while the high school offers a strong college-preparatory program for more than 500 students. While at high school, qualified students may also enroll in

courses at the University of Chicago, receive library privileges and even work with professors on research. The schools have two types of after-school program: one is a child-care program for children of working parents; the other is a program of enrichment classes where students can develop particular interests and talents.

University of Chicago School Mathematics Project A kindergarten to twelfth grade mathematics curriculum developed between 1980 and 1986 to give students of average mathematical ability a firm foundation in computational skills. An outgrowth of the educational reform movement of the early 1980s, the curriculum replaced the *NEW MATH* approach to teaching mathematics with a reality-based, problem-solving approach to mathematics. Designed to prepare students to function successfully in college, regardless of whether or not they were in a college-preparatory track in secondary school, the curriculum reverted to a traditional sequence of mathematics instruction: arithmetic, prealgebra and pregeometry through seventh grade; algebra and statistics in eighth grade; geometry in ninth grade; advanced algebra in tenth grade; functions, trigonometry, statistics and computer science in eleventh grade; and precalculus an option for twelfth grade. The use of calculators and computers was thoroughly integrated into the curriculum throughout the elementary and secondary school years.

University of Edinburgh A Scottish institution of higher learning founded in 1583 and the alma mater of many leading educators in the American colonies. Like Cambridge and Oxford in the previous century, Edinburgh and, to a lesser extent, its older counterpart in Glasgow, produced the leading Presbyterian ministers and thinkers of the 18th century, including philosopher Thomas Reid (1710–96), philosopher-historian David Hume (1711–

76) and minister-teacher JOHN WITHERSPOON. Witherspoon moved to the colonies and reshaped the fledgling College of New Jersey into Princeton College. There, he taught and prepared for public office the principal shapers of the new American republic, including one president (James Madison), one vice president (Aaron Burr), 10 cabinet officers, 60 members of Congress and three justices of the U.S. Supreme Court.

In addition to Witherspoon, Edinburgh gave the colonies such teachers as William Tennent, who founded the LOG COLLEGE, and Francis Alison, who reshaped Benjamin Franklin's Academy of Philadelphia into the College of Philadelphia (later, the University of Pennsylvania). What made Edinburgh and the training it gave its students important to American education is that Edinburgh, unlike English universities, did not cater to an elite class. Indeed, Edinburgh and other Scottish institutions provided students with a practical as well as classical education, at affordable fees, regardless of economic class or social standing. Men like Witherspoon, Tennent and Alison had been educated in an atmosphere of social tolerance, and they brought that tolerance to the New World.

Like Cambridge and Oxford in the 17th century, the Universities of Edinburgh and Glasgow also served as centers for advanced studies in the professions for Americans who had completed work for their baccalaureate at colonial colleges. Edinburgh's medical school was recognized as the world's finest in the mid-18th century, drawing students from all parts of the world. JOHN MORGAN, who later founded the first American medical school, studied medicine at Edinburgh after earning his bachelor's degree at the College of Philadelphia.

University of the American Expeditionary Forces in France An institution of higher education established by General John J. Pershing in Beaune, France, in March 1919, for

American servicemen. The commander-in-chief of American forces during World War I, Pershing found himself heading a large, idle army after the armistice and cessation of fighting on November 11, 1918. He quickly moved to set up schools on each post to provide elementary and secondary education for soldiers who lacked such schooling. He also set up educational centers at the corps and division level to provide more advanced education and technical education. The University of the AEF offered still more advanced training than these schools, offering about 200 courses taught by officers and enlisted men with appropriate training and experience. About 6,000 students enrolled in the college, which also offered teacher-training courses and the opportunity to serve as student teachers in post schools. The Pershing educational system was unique in that it was the first effort to make education and training an integral part of military life. In 1920 and 1921, however, Congress authorized sharp cutbacks in troop strength and military spending. The entire system, including the university, was abandoned, leaving the American armed forces totally unprepared for the educational effort they were forced to mount two decades later at the outbreak of World War II.

(See also UNITED STATES ARMED FORCES INSTITUTE.)

University of the Pacific The first chartered institution of higher education in California. Founded in Santa Clara in 1851 by Methodist ministers, the College of the Pacific, as it was called until 1961, later moved to Santa Clara and in 1924 to its present location in Stockton. The college opened the first medical school in the West in 1858 (now a part of Stanford University) and was first in the West to elevate teacher training from a two-year, post-secondary “normal school” program to upper-division college and graduate school studies. No longer affiliated with the Methodist faith,

the university has more than 3,300 students enrolled in its eight undergraduate schools and nearly 2,800 students in its graduate school.

University of the South The first university founded in the South in response to the inclusion of abolitionism as a centrality in the teaching of religion, history and political science in northern universities. Founded in Sewanee, Tennessee, in 1857—and colloquially known as Sewanee rather than by its formal name—the University of the South was established by Episcopal bishop Leonidas Polk, a Louisiana native and a graduate of the U.S. Military Academy at West Point. At the time, northern colleges and universities had become abolitionist in sentiment and active in hiding and transporting runaway slaves along the underground railway. The University of Michigan, Oberlin College, Franklin College, Illinois College and New York College had all gained reputations as “abolitionist seminaries.”

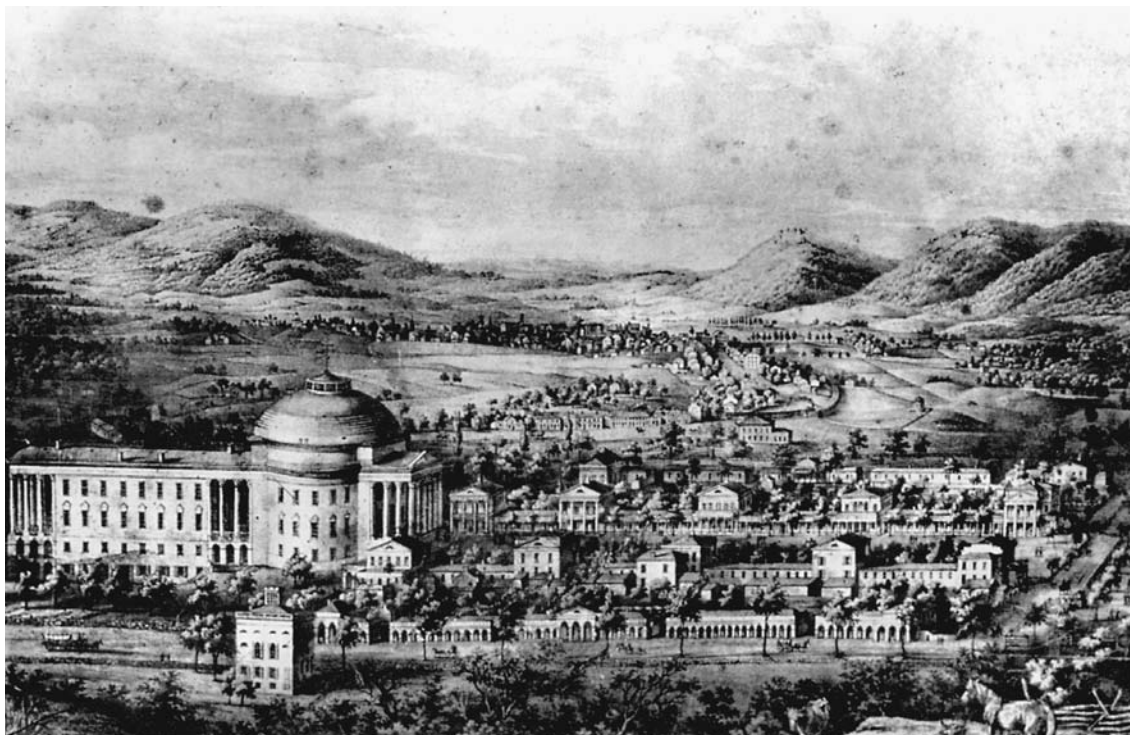
Earlier in the century, many sons of southern plantation owners had traveled north for their formal education, simply because the few colleges in the South, such as the College of William and Mary and the University of Virginia, could not accommodate their numbers. As northern colleges turned abolitionist, the desire for more southern colleges with a pro-slavery philosophy increased, and Bishop Polk, who would later serve as a Confederate general, helped found the University of the South, where sons of southern planters could study a curriculum that accommodated the legitimacy of slavery in an academic climate friendly to southern values.

The university was destroyed during the Civil War, along with the fortunes of its benefactors, but gifts from southern sympathizers in England allowed it to reopen in 1868. Although it once included a medical school and law school, it now has but two divisions, an undergraduate college of arts and sciences and a

graduate school of theology. Still affiliated with the Protestant Episcopal Church, its nearly 1,500 students remain 92% white. Since 1892, the university has published the renowned literary quarterly, the *Sewanee Review*, containing short fiction, poetry, essays and reviews.

University of Virginia The first American university to offer a comprehensive curriculum of the arts and sciences that would serve as an archetype for future American universities for much of the 19th century. Chartered in 1819 and opened in 1825, the University of Virginia was described by essayist Ralph Waldo Emerson as the “lengthened shadow of one man”—its founder THOMAS JEFFERSON. After leaving national office in 1809, Jefferson had returned

to his home in Monticello, Virginia, where, as a behind-the-scenes power in Virginia politics, he continued pressing for a state system of free, universal public education. Indeed, he often remarked that if he had been forced to choose between establishing a statewide system of public primary schools or a great university, he would have chosen the former. Fearing that universal public education would mean an end to child labor and even manumission, the state legislature gave him the reverse, in January 1818. And so in August, a gubernatorial commission chaired by Jefferson selected Central College in Charlottesville as the site for the new institution and adopted an organization and program that Jefferson had drawn up the previous year.



Artist's rendering of the original buildings at the University of Virginia. Founder Thomas Jefferson designed the buildings and the school's original curriculum. (*Library of Congress*)

As stated in his report, Jefferson's goal for the new university whose buildings and lawns he designed was:

To form the statesmen, legislators and judges, on whom public prosperity and individual happiness are so much to depend;

To expound the principles and structure of government, the laws which regulate the intercourse of nations, those formed municipally for our own government, and a sound spirit of legislation, which, banishing all arbitrary and unnecessary restraint on individual action, shall leave us free to do whatever does not violate the equal rights of another;

To harmonize and promote the interests of agriculture, manufactures and commerce, and by well-informed views of political economy to give a free scope to the public industry;

To develop the reasoning faculties of our youth, enlarge their minds, cultivate their morals, and instill into them the precepts of virtue and order;

To enlighten them with mathematical and physical sciences, which advance the arts, and administer to the health, the subsistence, and comforts of human life;

And, generally, to form them to habits of reflection, and correct action, rendering them examples of virtue to others, and of happiness within themselves.

Jefferson's curriculum—by far the broadest of any university in the United States (and in most of the world) at the time—did away with divinity studies and offered 10 broad areas of study: "ancient languages (Latin, Greek, Hebrew), modern languages (French, Spanish, Italian, German, Anglo-Saxon), pure mathematics (algebra, fluxions, geometry, architecture), physico-mathematics (mechanics, statics, dynamics, pneumatics, acoustics, optics, astronomy, geography), natural philosophy (chemistry and mineralogy), botany (including zoology), anatomy (including medicine), government political economy

(the law of nature and nations, and history), municipal law, and ideology (grammar, ethics, rhetoric, belles lettres and the fine arts)."

Jefferson's curriculum reflected his general distaste for organized religion, his disdain for the English class system inherent in the Anglican Church and his rejection of Puritan concepts of predestination. He believed that man could, through education, by his own free will, rise above his class. "Education," he said ". . . engrafts a new man on the native stock and improves what in his nature was vicious and perverse into qualities of virtue and social worth. And it cannot be but that each generation succeeding to the knowledge acquired by all those who preceded it, adding to it their own acquisitions and discoveries, and handing the mass down for successive and constant accumulation, must advance the knowledge and well-being of mankind, not infinitely, as some have said, but indefinitely, and to a term which no one can fix and foresee."

A skilled architect, Jefferson turned his dream for a great university into plans that were translated into an architectural reality over the next six years, and Jefferson was named rector, or chairman, of the board of visitors, or trustees. The 10 chairs he originally envisioned were reduced to eight, with law and government combined into one school and physico-mathematics abandoned. In addition, various Christian denominations were invited to establish theological seminaries outside the perimeter of the university; the university itself, which he called an "academical village," remained a public, secular institution. It also offered students the widest measure of academic freedom then available in the world with each student free to choose from the eight schools of the university. In a sense, each school was a precursor of the modern "major."

Jefferson died in 1826, just after completion of the last buildings of the original campus. He left behind a university that became

the archetype of every major public university that would ever be built in the United States. The Land Grant College Act of 1862 would later create a new type of public college dedicated to practical skills needed in agriculture and industry, but as the great public universities emerged, they would be founded on the principles of "Mr. Jefferson's University." The University of Virginia today offers undergraduate programs in architecture, arts and sciences, commerce, education, engineering and applied science and nursing. The six undergraduate schools enroll nearly 14,000 students; the nine graduate schools, about 9,250 graduate students.

University of Wisconsin A pioneer institution of higher education in the area of public service and adult education through its extension services. Now made up of 26 campuses, with a total enrollment of about 160,000, the university's origins go back to 1849 and the founding of the tiny College of Wisconsin, in Madison. Later a land-grant institution, the university was swept up in the fervor of progressive political and economic reform that gripped the state in the 1890s. Several years of poor crops and dust storms had devastated American agriculture and helped plunge the nation into a financial panic. In Wisconsin, public discontent exploded with the discovery of rampant bribery and corruption among the Republican leadership that had controlled the state's politics since the end of the Civil War.

In 1900, Robert M. La Follette was elected governor on a platform of radically progressive reforms, including direct primaries for nominating candidates, establishment of a state civil service and state regulation and equitable taxation of railroads and other corporate entities. Called the "Wisconsin Idea," it included government recruitment of expert advisors from the University of Wisconsin, whose equally progressive president, CHARLES R. VAN HISE, was quick to convert the university into a partner of

state government in the rebuilding of the state economy and body politic.

A former professor of geology, Van Hise had conducted detailed studies of mineral-bearing areas of the Lake Superior region as a service to the state. As president of the university he believed the obligation of a public institution of higher education was to use science to improve every aspect of the life of the state's citizens. He proposed to implement his goal in three ways: through faculty research to expand knowledge and develop as many practical uses as possible for such knowledge; by sending faculty experts to collaborate with government officials in improving agriculture, developing industry and solving social and economic problems and by creating and expanding the university's extension program to bring knowledge to every citizen. "I shall never be content," said Van Hise, "until the beneficent influence of the University reaches every family in the state. This is my ideal of the state university."

Van Hise went on to strengthen the university's research programs and train experts in agriculture, engineering, medicine, law, politics, economics and history to advise state administrators. Dozens of professors served on state regulatory and investigating commissions and helped draft progressive legislation that shaped the "Wisconsin Idea." Van Hise also expanded the extension division into the most comprehensive, farthest reaching such unit of any university in the world. If, as educators contend, Charles W. Eliot had made Harvard the archetype of private universities, Van Hise, in his turn, built Wisconsin into the archetype of public universities. Word of his accomplishments spread through magazine articles and, eventually, through Charles McCarthy's widely circulated book, *The Wisconsin Idea* (1912). Delegations of educators from universities across the United States and from overseas flocked to Madison to study what Van Hise had accomplished and to take back with them what

they could. The University of Wisconsin was hailed as the world's finest by English educators, and the author Lincoln Steffens declared Van Hise to be "in a class by himself among college presidents." As president from 1903 to 1918, Van Hise established a model for university-government cooperation that has become a uniquely American concept, with the university retaining academic freedom while working with government to provide the citizenry with the benefits of government-sponsored university research. In addition, he expanded the public service and educative functions of American universities by making university extension and other outreach services an integral part of every public university's basic functions.

The university today serves as the state's research center, and more than 160,000 people per year avail themselves of the university's continuing education programs and distance learning programs. Among the public service facilities on the Madison campus are the Space Science and Engineering Center, the Physical Science Laboratory, a museum of art, an arboretum, agricultural experiment stations and hospitals.

university press A publishing company owned by a university and devoted to the production of scholarly works, often, though not exclusively, by the university's own faculty. Usually nonprofit, university presses were first established in the 15th and 16th centuries at the Sorbonne, in Paris, and at Oxford and Cambridge Universities, in England. Cornell University established the first university press in the United States in 1869, followed by Johns Hopkins University in 1878. More recently, several university presses have been converting from production of printed books to digital "e-books," which are free to read over the university press Web site, although readers may order printed copies for a fee through associated print-on-demand services.

unobtrusive (nonreactive) measures Any examination of an individual or group of individuals that takes place without their knowledge and, therefore, permits them to perform free of the normal anxieties associated with test-taking. Thus, observation through one-way glass is one common method of studying behavior unobtrusively. The theory behind unobtrusive examinations and measures is that test-takers, regardless of age, invariably fail to perform to their potential because of anxieties associated with test-taking that necessarily invalidate their scores. On the other hand, the concept of unobtrusive testing violates every precept of privacy built into the concepts of American democracy.

Nevertheless, many psychological tests are fraught with unobtrusive measures because it is believed that the necessity for valid diagnosis outweighs test-taker rights to privacy. Indeed, the tendency of the emotionally disturbed not to reveal inner feelings represents one of the most self-destructive blockages to successful therapy. One standard method is to construct a test that appears to measure one characteristic while actually measuring another. A group of teenagers might, for example, be told that a test is measuring their preference in music, but the carefully constructed set of questions might actually be measuring their tolerance for violence. Still another element of the unobtrusive test is the promise of anonymity. While answer sheets of such tests require no names or other written identification, a variety of coding methods (such as a hidden numeral corresponding to each desk in a classroom) permit post-test identification of each test-taker. Because of a number of Supreme Court decisions in recent years guaranteeing the privacy rights of minors as well adults, test administrators have become reluctant to use unobtrusive measures without the permission of a parent or guardian (for minors) or a court order (in the case of adults).

unskilled workers Members of the labor force with a level of intellectual, manual or physical training that is inadequate to meet the long-term needs or demands of potential employers and assure permanent employment. A disproportionate percentage of the unskilled are men and women who, for whatever reason, drop out of or fail to complete high school. The consequences of that failure are startling. Nearly 30% of all high school dropouts experience periodic unemployment, although the actual unemployment rate during the prosperous years since 2000 has fluctuated between 6% and 10%. The median annual income of those who find work is about \$25,000 for men and \$20,000 for women, compared with about \$35,000 and \$25,000, respectively, for men and women with a high school diploma or equivalent.

A high school diploma, however, is no guarantee of adequate skill levels for the U.S. marketplace of the 21st century. Unemployment rates among workers with high school diplomas but no college are almost 15% above the national average, while the jobless rate for workers with associate degrees from two-year colleges usually match the national average, and that of workers with bachelor's degrees is 35% below the national unemployment rate. However, studies by the Department of Labor indicate that the plight of the unskilled relates less to any decline in the quality of American secondary school education than to the disappearance of jobs for the unskilled and a sharp increase in skill requirements of existing and new jobs. At the simplest levels, a variety of earth-moving equipment has replaced the American day laborer who used to build American roads, automation has forced millions off factory production and assembly lines and computers have left equally large numbers of clerical workers unemployed. Unlike skilled trades men, such as carpenters, plumbers and electricians, assembly-line workers and office

clerks have few manual skills that they can carry to other jobs. Machinery that semiliterate but mechanically adept workers could operate and even repair because of the visibility of all working parts, was replaced by equipment with microprocessors and other electronic components that require the ability to decode complex manuals and diagrams. By 2000, workers with no more than a high school diploma qualified for only about 45% of new jobs.

Since 2000, however, a remarkable change has taken place in the workplace. Although jobs requiring the most education and training continue to be the fastest-growing and highest-paying, jobs requiring the least education and training now provide the most openings—albeit the lowest pay. Indeed, such jobs now account for four of every 10 jobs—largely because of the huge expansion of a variety of service industries such as hotels and restaurants, supervisory institutions for the elderly, and building maintenance. The occupations that experienced the largest numerical increase in employment during the last five years of the 1990s were cashiers, janitors and cleaners, retail salespersons, waiters and waitresses and registered nurses. Those experiencing the largest increases in the 2000–2005 period were personal and home-care aides and home health aides.

upper division college A degree-granting institution of higher education limited to the last two years of the traditional four-year program. Unlike community and junior colleges, which limit their programs to freshman- and sophomore-level college work and confer associate degrees, upper division colleges offer junior- and senior-level studies and confer bachelor's degrees. College of the Pacific (now University of the Pacific) created one of the first upper division colleges in the United States in 1924, when it established its School of Education. The school was designed to elevate teacher training to a four-year, bachelor's

degree program requiring study of college-level liberal arts and sciences before embarking on studies of pedagogy. At the time, most teacher training was limited to two-year, “normal” school programs that followed high school graduation.

Upward Bound A federally supported program to supplement the secondary school education of the socioeconomically deprived and prepare them for college. Created under the Higher Education Act of 1965, Upward Bound provides grants to organizations and educational institutions that provide one-to-one tutoring, remedial instruction, cultural experiences, counseling and supplementary classes to participating students. Designed to instill motivation as well as academic skills, Upward Bound offers two types of program: one, a six-to-eight-week summer session usually held on a college campus, and the other, an after-school and Saturday program during the school year. Most student participants attempt to combine the two. Although a federal study found that Upward Bound students have a significantly higher rate of enrollment in post-secondary education than nonparticipants, there are no satisfactory statistics of college-completion rates.

usage The way in which language customarily communicates ideas. Most individuals learn and use several language varieties and are able to shift automatically—either consciously or unconsciously—from one consistent usage to another. Some grammarians cite seven overlapping categories of modern English usage: socioeconomic-educational, stylistic, gender-based, methodological, historical, occupational and geographic. Examples of socioeconomic-educational usage are standard English (that taught in schools) and nonstandard English (that used in specific communities, such as black English). Stylistic English ranges from casual (I’m, you’re, etc.) to formal (I am, etc.), while gender-based

English is evident in obscenity-laced, locker room chatter. Methodological usage depends on the method of communication (oral, written and so on). Historical usages are evident in the differences between Elizabethan, 19th-century and 20th-century English. Occupational usage is tied to the jargon of the individual’s work, while geographic usages are evident in the varieties of English spoken in the American East, West, north and South.

Utah The 45th state to join the Union, in 1896. Utah was settled by Mormons in 1846, when the area was still controlled by Mexico. The Mormons established the first school there a year later, in the Salt Lake Valley. Education remained under the tight control of the Mormon Church (officially, The Church of Jesus Christ of the Latter-day Saints) even after the legislative assembly empowered city councils to establish secular common schools in 1895. A century later, the state had more than 700 public elementary and secondary schools, with a combined enrollment of more than 425,000 students. Although banned as unconstitutional by the Supreme Court, prayer in school remains the rule in many Utah public schools—especially in rural schools in virtually all-Mormon communities. Despite the deep involvement of the church with public school education and the injection of biblical “truths” into the curriculum of most rural schools, Utah’s public elementary and secondary school students rank slightly above average in the nation in both reading and mathematics proficiency, consistently scoring between 25th and 30th, respectively, among the states. The state has nearly 800 public schools, with an enrollment of almost 485,000, of whom more than 15% are minority children and 11% live in poverty.

The state has seven public and eight private four-year institutions of higher education and six public and seven private two-year colleges. Its most notable private institution is Brigham

Young University, founded by and still closely tied to the Mormon Church and the alma mater of many of the state's most prominent business and political leaders. BYU's mission statement describes as "inadequate" any education that does not emphasize Jesus Christ. The national honor society Phi Beta Kappa rejected Brigham Young's application for membership, saying

that the university's religious philosophy was incompatible with academic freedom.

In the public sector, Utah State University has strong space and agricultural research departments, while the University of Utah has a renowned medical center and has been a leader in research on artificial organs and genetics.

V

vaccination programs In education, the immunization of school-aged children to prevent and control the spread of communicable childhood and other diseases, such as smallpox, diphtheria, measles, pertussis (whooping cough), poliomyelitis, rubella (German measles), scarlet fever and tetanus. Most states require children to receive appropriate vaccinations and to present evidence such as a doctor's or hospital certificate before enrolling in school each year. Despite such requirements, an estimated one-third of the children in the United States—most of them poor children of immigrant families—remain uninoculated. Although parents belonging to certain religious groups have attempted to bypass vaccination requirements on religious grounds, the U.S. Supreme Court has twice ruled (in 1920 and 1922) that state legislation requiring vaccination for admission to schools does not constitute an unconstitutional invasion of personal rights. The courts have also upheld the right of school boards and boards of health to require inoculations during epidemics.

V-A-K-T Method A multisensory approach to the teaching of reading that combines sight, speech, sound, movement and feel. The theory underlying this method is that the more senses that are involved, the greater the degree of learning. V-A-K-T—an acronym for visual, auditory, kinetic and tactile—was originally

developed for the learning disabled, but it is now commonly used in most elementary school classrooms. Developed at a University of California laboratory school in the 1920s by Grace Fernald and others (see FERNALD METHOD), the method calls for students to trace the letters of a word they have copied, while saying the word aloud, bringing into play visual, tactile, motile, oral and aural senses. After several repetitions, the student is then asked to write the word without using the copy. Eventually, the student learns to write the word without the tracing procedure and can begin recognizing parts of new words that contain elements of the first words learned.

valedictorian The high school or college student who delivers the valedictory (*vale*, the Latin for farewell; *dictus*, from the Latin verb *dicere*, to say) address at graduation ceremonies. The speaker is usually chosen by virtue of having attained the highest academic rank in the graduating class. Valedictories first became a part of graduation ceremonies in England in the mid-17th century, as professors said farewell to their students. The leading student academic's reply began as a short expression of thanks to the faculty. The valedictory and the recognition bestowed on the valedictorian evolved into a prominent element of American (more than British) graduation ceremonies in the 19th and 20th centuries.

values In education, the principles, morals and ethics learned in the home and at school. Values are bipolar—i.e., negative, as well as positive—and usually determine, consciously or unconsciously, student social behavior. Students enter preschool and the school system with a partially developed set of values, which will gradually be solidified or modified by teacher, peer and other influences. Values are usually somewhat amorphous and subject to change, often radical, throughout a student's development and throughout life. In one of the few studies relating adult values to level of education, a series of surveys between 1949 and 1971 found a lasting correlation between level of schooling and the degree of a person's humaneness, commitment to civil liberties and freedom of information, belief in due process of law and readiness to grant equal opportunities to minority groups.

In the years following World War II—especially during the civil rights struggles of the 1950s and 1960s and the subsequent debate over participation in the Vietnam War—the teaching of values brought elementary and secondary education into continual conflict with parents and leaders of religious groups who insisted that schools should limit teaching to academics. Many schools responded by eliminating values from the curriculum, while others introduced so-called value-clarification programs—a teacher-neutral approach that tried to help students identify and define their own values. Value clarification is based on recognizing alternative values, choosing one's own values independently of external pressures, recognizing the consequences of behavior based on each value, prizing one's own choice and willingly affirming it publicly.

As conflicts increased between parents and schools over which values to teach, however, conflict-shy teachers simply eliminated values from classroom discussions—until the early 1990s, when it became clear that American

elementary and secondary school students were unsure of the differences between right and wrong and unable to make complex personal moral decisions. Because of soaring divorce rates, more than half the school-age children in the United States were growing up in one-parent families; many were unable to cope with such complex social problems as drugs, alcohol, suicide, teen pregnancy and the like. One survey found 47% of students willing to cheat; 36% ready to lie to protect friends who had committed vandalism; 60% who believed males had the right to sexual intercourse without the female's consent. In 1993, nearly 60% of high school seniors surveyed by the U.S. Department of Education admitted cheating on tests and assignments. In 1999, a spate of killings at school by gun-wielding students added to the growing anxiety over the failure of schools to instill values in their students. Two students at Columbine High School in Littleton, Colorado, shot and killed 12 students and a teacher and wounded almost two dozen others before killing themselves on April 20, 1999. A month later, a 15-year-old gunman wounded six students at a high school in Conyers, Georgia. In December, a Fort Gibson, Oklahoma, middle school student opened fire with a semi-automatic handgun and wounded five students, and in February 2000, a six-year-old boy in a Michigan elementary school pulled out a gun and shot and killed a fellow six-year-old first-grade girl. A year later, in March 2001, two students at Santana High School, Santee, California, shot and killed two students and wounded 13 others, but those killings had at least one positive effect on America's schoolchildren by breaking the pervasive code of silence against reporting fellow students to school authorities for rule violations. After the Santee killings, tips by students led to arrests in five California schools, thwarting planned violent attacks on students or teachers. As public outrage exploded over what seemed to be a

sharp decline in children's moral values, the U.S. Department of Education set aside more than \$5 million a year to subsidize character development education, and 28 states began using the funds either to train teachers in value education or to bring in outside organizations to do the job.

vandalism In education, any deliberate damage to school property, ranging from spraying graffiti to burning down buildings. Almost 100,000 instances of school vandalism are reported in the United States each year. Police authorities claim most vandalism is committed by people under 18, with 12- to 15-year-olds the modal group. Schools represent particularly attractive targets for young vandals because they are unoccupied much of the time and are particularly resented by many youngsters as an enforcer of discipline and order. Alarm systems and uniformed patrols reduced school vandalism by almost two-thirds since the 1990s.

Van Hise, Charles R. (1857–1918) American geologist, educator and university president who expanded the role of the public university to include adult education and service to the state. Born and educated in Wisconsin, he spent his entire adult life at the UNIVERSITY OF WISCONSIN—first as a student, then as professor of metallurgy and geology from 1879 to 1903, and then as president from 1903 until his death. Granted the university's first Ph.D., he was deeply devoted to the concept of public service and was responsible for surveys of the ironbearing areas of Lake Superior to help the area's economic development. At the time, the state had suffered a decade of poor crops, and a financial panic in 1893 had left the entire United States in a deep depression.

In Wisconsin, public discontent exploded with the discovery of rampant bribery and corruption among the Republican leadership that had controlled the state's politics since the end

of the Civil War. In 1900, Robert M. La Follette was elected governor on a platform of radically progressive reforms, including direct primaries for nominating candidates, establishment of a state civil service, state regulation and equitable taxation of railroads and other corporate entities. Called the "Wisconsin Idea," the program was not implemented until 1903, when La Follette finally obtained a majority in the statehouse.

The Wisconsin Idea was based in part on the government's use of academic experts in all fields relating to government. Van Hise, who had just become president of the University of Wisconsin, quickly redirected that institution's resources to help the government rebuild the state's economy and body politic. He sent faculty experts to collaborate with government officials in improving agriculture, developing industry and solving social and economic problems. Under his direction, dozens of University of Wisconsin professors were soon serving on state regulatory and investigating commissions and helped draft progressive legislation that eventually shaped the "Wisconsin Idea." Van Hise established a model for university-government cooperation that has become a uniquely American concept, with the university retaining academic freedom while working with government to provide the citizenry with the benefits of government-sponsored university research.

Van Hise believed the obligation of a public institution of higher education was to use science to improve every aspect of life for the state's citizens. He fulfilled that goal by encouraging faculty research to expand knowledge and develop as many practical uses as possible for such knowledge and by creating and expanding the university's extension program to bring knowledge to every citizen. During his administration, Van Hise increased the faculty fourfold, doubled student enrollment, increased state appropriations for the university almost

fivefold and doubled the university's land holdings to permit construction of new buildings. In his most stunning accomplishment, he carried university education to the people of his state by expanding the extension program. He appointed a special assistant to redesign and popularize courses and convince farmers and other ordinary citizens to avail themselves of "their" university's educative services. Van Hise and his university set standards for extension education that drew educators from around the world to study and carry home elements of the process to their own universities. Educators who had hailed Charles W. Eliot for converting Harvard into the archetype of the private university; now hailed Van Hise for converting Wisconsin into the archetype of the public university. The University of Wisconsin was called the world's finest by English educators, and author Lincoln Steffens declared Van Hise to be "in a class by himself among college presidents."

While president of the university, Van Hise himself participated in public service as chairman of the Wisconsin State Conservation Commission and State Board of Forestry, and he served education as a trustee of the Carnegie Foundation for the Advancement of Teaching. He was author of a number of scientific books on geology and metallurgy and an important work on conservation, *The Conservation of Natural Resources in the United States* (1910). He also contributed scores of papers to scientific journals.

Van Rensselaer, Stephen (1764–1839)

American soldier, public official and founder of the first private technical school in the United States, the Rensselaer School, which was later renamed Rensselaer Polytechnic Institute. The aim of the school, said Van Rensselaer, was to apply science to "the common purposes of life." He opened the school as a specialized teacher training school that would

send its graduates to instruct the children of farmers and mechanics "on the application of experimental chemistry, philosophy, and natural history to agriculture, domestic economy, the arts, and manufactures." The school was the nation's first to train civilian engineers, although the United States Military Academy had already started training military engineers to build roads, bridges and other installations in wartime.

Except for underwriting his school, Van Rensselaer had no other connection with education. He had inherited his wealth and vast estates near Albany, New York, when he was five. A graduate of Harvard College, he was assigned the rank of major general largely because of his station in life. After an undistinguished command in the War of 1812, he entered politics, served in the state legislature for nine years, was lieutenant governor for one term and served a term in the United States House of Representatives. He was a major force behind the construction of the Erie Canal.

varsity The principal team representing a college or school against other colleges and schools in a given sport or other competition. An English corruption of the last three syllables of the word university, the term dates from the 17th century and the beginning of competition among debating clubs from England's "versities."

Vassar College A nonsectarian, coeducational institution founded as a woman's college in Poughkeepsie, New York, in 1861, during what had become a national frenzy to expand higher education and the number of Americans with superior training. From 13 colleges in 1783, the number of institutions of higher education had grown to 119 by 1850, not including 44 theological seminaries, 36 medical schools and 16 law schools. Colleges were opening for every conceivable special pur-

pose: to train engineers, farmers, blacks and, of course, women. Although several institutions—all of them called “seminaries” or “academies”—had opened earlier in the century offering college-level education for women, many had digressed into teacher training.

The English-born philanthropist Matthew Vassar (1792–1868), who had made a fortune in the United States from a brewery and a variety of other enterprises, was determined to build a true college for women, with a curriculum equal to that of any men’s school. In 1861, he founded and endowed Vassar Female College. He advertised it across the United States, and, when it opened in 1865, it attracted a large student body. Vassar’s high-quality education—for the first time at any women’s institution, equal to that at Yale, Harvard and the nation’s best men’s colleges—proved instrumental in destroying the myth that women were not as academically capable as men. Indeed, Vassar’s success led to a score of other women’s colleges that eventually gained women educational equality with men at the undergraduate level. Vassar dropped the “Female” from its name in 1867, and a century later, in 1969, it followed the example of many all-male colleges and became coeducational. It now has more than 2,400 students, more than 40% of them male.

venture educational enterprise funds A college- or university-sponsored partnership that sequesters a percentage of the institution’s endowment as “seed capital” for profit-making companies to commercialize discoveries emerging from the institution’s laboratories. The institutional partnerships are modeled on conventional venture capital funds that invest money to start new or emerging companies and finance the development of ideas into new products and services. College and university venture funds simply invest in potential ventures emerging from within their own institu-

tions. Organization of such funds vary widely, with some institutions investing in partnerships with faculty members responsible for the development, and others operating in partnership with other institutions, with investment bankers or with commercial developers. Vanderbilt University, for example, invested \$10 million of its endowment funds to start The Chancellor Fund, which has invested in a variety of start-up companies, including a company that designed a new, smaller and less costly high-resolution, low-radiation X-ray machine based on technology developed in Vanderbilt’s laboratories.

(See also FOR-PROFIT EDUCATION INDUSTRY.)

Vermont The 14th state to join the Union, in 1791, after 14 years as an independent republic. Its constitution as a republic called for establishment of primary schools in each town and a grammar school in each county. In 1823, the first formal teacher-training school in the United States was founded in Concord; it was, however, a private school. Unlike neighboring Massachusetts, where the first public teacher-training school was founded in 1839, Vermont would remain a bastion of private education until after World War II. Even the University of Vermont was a private institution until 1955. It is now one of five public four-year institutions of higher education. In contrast, the state has 15 private four-year colleges, including Bennington College; Norwich University, a private military college founded in 1819, and Middlebury College, a prestigious private institution founded in 1800 and the first American college to grant a degree to a black man, Alexander Lucius Twilight, in 1823. Vermont has one public and two private two-year colleges.

The state’s nearly 400 public elementary and secondary schools have more than 100,000 students, only 4.2% of them minority and fewer than 10% living in poverty. Below-average

quality of education spurred the state's schools to introduce radical reforms in the early 1990s, when it pioneered OUTCOME-BASED EDUCATION, using the PORTFOLIO as a basic evaluative tool in teaching. The portfolio approach, in turn, requires more writing than conventional public schools in and out of class, more homework, and the production of a body of work indicative of a student's mastery of a subject. Each piece of work becomes part of a record of development rather than an end in itself and can be compared to national norms that help students recognize the quality of their work in far broader terms. Portfolio assessment and comparison to national norms also help teachers to assess the quality of their own teaching. A decade later, Vermont's teaching quality had improved dramatically—to fourth in the nation. In the 2005 NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS tests, Vermont fourth grade students ranked third in the nation in reading proficiency and fifth in mathematics proficiency, while eighth graders finished seventh and fourth.

vernacular learning In education, a highly controversial approach to inner-city classroom teaching, using the vernacular (from the Latin *verna*, meaning household-born slave) or language of the streets, with which most children are more familiar. Proponents of vernacular learning maintain that many inner-city children automatically translate standard English into their own vernacular, but that the necessity to translate slows the learning process and often blunts children's motivation to learn. Critics, on the other hand, maintain that classroom reinforcement of the vernacular automatically impedes children from assimilating into mainstream society by depriving them of standard English language skills. In spite of the controversy, inner-city schools have attracted so many teachers who are themselves products of the inner city that teaching and learning in

the vernacular has gradually crept into the classroom of many such schools.

(See also BLACK ENGLISH; MULTICULTURAL EDUCATION.)

Vernonia School District 47J v. Acton A 1995 United States Supreme Court decision upholding an Oregon high school's right to require random urinalysis drug tests as a condition for participating in interscholastic athletics. The Court said such testing was unobtrusive and served an important societal and government interest in deterring drug use. The school argued that drug use had been an increasing problem at the school and that drug users had been responsible for rudeness in class, outbursts of obscene language and other violations of school rules. It presented ample evidence that student athletes at the school had the highest incidence of drug use and were leaders of the drug culture there. Moreover, coaches reported a higher number and severity of injuries among athletes who used drugs.

(See also SUBSTANCE ABUSE.)

vesting A guarantee that an employee will receive all accumulated retirement benefits at the normal retirement age, even if the employee does not remain with the organization until then. The vast majority of school and college teachers contribute to vested pension plans. Under a vested plan, a teacher might, for example, leave the profession after 12 years but would still be entitled to 12 years' retirement benefits upon reaching the normal retirement age.

Beneficiaries may be partially or fully vested. They normally become vested after working in the organization for a prescribed number of years and if they do not withdraw any retirement contributions. More than 20 states require teachers to work for five years to be vested—the same number of years usually required for vesting in the private sector. Twenty states, including New York, New Jersey,

Pennsylvania and Michigan, require teachers to work for 10 years to be vested. West Virginia requires teachers to work for 20 years, Alaska eight. Five states require less than five years of teaching for vesting. Although beneficiaries of vested pension funds cannot collect whatever is due them until they reach the normal retirement age, whatever benefits they have accrued while with the organization must be paid to them upon retirement.

vicarious learning A second- or third-hand learning process, whereby an individual learns from the experiences or purported knowledge of others. Elementary and secondary school children are especially subject to unquestioned, vicarious learning from parents, peers, television programs, movies and other sources. Vicarious learning may or may not be based on accurate data. If unsubstantiated by subsequent firsthand research, vicarious learning can interfere with accurate assessment and acquisition of classroom knowledge. Racial and religious prejudice, for example, is typically the result of vicarious learning, and even the most skilled teachers are hard put at times to correct the ill effects of this type of vicarious learning.

viewbooks Descriptive brochures issued by most private secondary schools and almost all colleges and graduate schools, with extensive photographs and information about their institutions. Most schools, colleges and graduate schools also have Web sites to provide the same data. Although they vary from institution to institution, viewbooks generally include information on life at each school, the range of courses and extracurricular activities, a profile of the most recent freshman class and of the most recent graduating class. Although extremely informative, viewbooks nevertheless portray each institution at its best—with photographs of the campus in full bloom and students universally enjoying themselves at work and play.

Mention is seldom made of such matters as crime rates, drug and alcohol abuse, and the percentage of courses taught by untrained teaching assistants rather than professors. Negative data on any given school is usually attainable only through direct inquiry.

Vincent, John Heyl (1832–1920) American religious leader and educator who established a uniform Sunday-school curriculum for American Protestant churches. He was also responsible for expanding an annual meeting of Sunday-school teachers at Lake Chautauqua, New York, into one of the greatest national adult-education programs in history. Born in Alabama, he grew up in Pennsylvania and was ordained a Methodist minister in New Jersey in 1855. He moved to Illinois, serving as pastor for a number of churches, before moving to Chicago, where in 1872 he joined the evangelist Dwight L. Moody in taking control of and reorganizing the International Sunday School Union. At the time, almost every Protestant Sunday school had its own, individual approach to educating its children. After visiting the Holy Land and studying how Jewish schools taught religion, Vincent developed a rationally ordered curriculum, with the Bible as a textbook, with a syllabus and with a carefully worked out series of lessons for each Sunday in the school year, with home readings and questions of gradually increasing complexity. The result was that the “Babel of courses” that Protestant churches had taught for 50 years was replaced with a single system. For the ensuing 50 years, each participating Protestant Sunday school in the United States taught the same passage from Scripture and the same classroom lesson every Sunday.

In addition to creating a universal curriculum, Vincent also introduced professional teacher training into the Protestant Sunday-school system. He published a monthly professional journal, *The Sunday School Teacher*, and

organized an interdenominational convention, where Sunday-school teachers met for several days to hear lectures on the Bible, on pedagogy and on practical aspects of Sunday-school work, such as expanding their reach to adults. With the help of a wealthy inventor and lay Sunday-school teacher, Vincent also established the Chautauqua Assembly as a resident summer institute for Sunday-school teachers, but he soon expanded its educational reach into other areas, such as literature and science, and organized a book club and correspondence courses for teachers to study at home. Its success bordered on the phenomenal, attracting thousands when only a few hundred had been expected.

Sensing an insatiable thirst for knowledge among a people who had been denied a basic education by having been forced into child labor, Vincent expanded the program into a summer study and training institute with an educational scope that went well beyond teacher training for Sunday schools. By 1878, he expanded the program into the CHAUTAUQUA LITERARY AND SCIENTIFIC CIRCLE, a four-year program that combined correspondence courses and formal summer studies in the arts and sciences, followed by an examination and the granting of a college-type diploma.

Within a few years, the Chautauqua phenomenon spread across the northern part of the nation, with local study groups formed in thousands of communities and regional gatherings that lasted from a week to a month, offering lectures, concerts, courses and recreational activities. Vincent founded an appropriate publishing enterprise, the Chautauqua Press, to furnish Chautauqua participants with books, pamphlets, magazines and study guides. Vincent led both the Sunday School Union and the Chautauqua movement until 1888, when he was elected bishop of his church, the Methodist Episcopal, and served at a succession of posts in the United States and, from 1900 until

his retirement in 1903, as bishop of all of Europe. Vincent was the author of a number of books, including *The Chautauqua Movement* (1886), *The Modern Sunday School* (1900) and *Family Worship for Every Day in the Year* (1905).

violence In education, the use of force by a student, with or without a weapon, to cause injury to another student, teacher or member of the school staff. A discouragingly pervasive problem in American public schools during the 1970s and 1980s, violence among juveniles declined dramatically during the 1990s and early 2000s, after congressional enactment of the Safe Schools Act of 1994 forced schools to expel students found carrying drugs or weapons, or face loss of federal aid. Although the policy helped reduce juvenile crime by 30% to 50%, it did not prevent a sudden eruption of school shootings in 1999 and 2001. Two students at Columbine High School in Littleton, Colorado, shot and killed 12 students and a teacher and wounded almost two dozen others before killing themselves on April 20, 1999. A month later, a 15-year-old gunman wounded six students at a high school in Conyers, Georgia. In December, a Fort Gibson, Oklahoma, middle school student opened fire with a semiautomatic handgun and wounded five students. In February 2000, a Michigan first grader pulled out a gun and killed a six-year-old girl in front of his teacher and classmates at school, and in March 2001, two students at Santana High School, Santee, California, shot and killed two students and wounded 13 others. The shootings brought the number of violent deaths in and around schools from 1992 to 2000 to 630, although the number of youth-perpetrated homicides away from school totaled more than 24,400—an average of more than 3,000 a year. By 2002, both figures fell dramatically, with the number of homicides at school falling to only 14 in academic 2001–02, while the total number of juvenile-inflicted homicides fell to about 2,000.

Despite frightening headlines that accompany each incident, juvenile crime as a whole fell to its lowest level in decades during the early 2000s, as arrests for four types of violent crime—murder, rape, robbery and aggravated assault—fell more than 42%, from more than 123,000 arrests in 1995 to 71,000 in 2002. In 1995, more than 40% of eighth graders and 34% of tenth graders in the United States were involved in physical fights at school, while 38% of eighth graders and 29% of tenth graders had been threatened by other students at school. By 2002, only 12.5% had been involved in fights and only 9% had been threatened with violence.

The dramatic decline in violence was the result of a number of programs adopted by school districts across America—some of them preventive, others punishment-oriented and still others treatment-oriented. The first group of programs includes installation of metal detectors, through which all arriving students and staff must pass as they enter school. Other schools have hired uniformed security staff to patrol hallways. Among punishment-oriented responses to school violence has been the passage of a number of laws, including a federal “schoolyard drug law” stipulating heavy penalties for drug trafficking within 1,000 feet of any campus. California passed an anti-youth gang law that provides for the arrest of parents who fail to “exercise reasonable care, supervision, protection, and control over a minor child.” Such parents may be subject to fines of up to \$2,500 and imprisonment for up to one year.

Among treatment-oriented programs are a variety of behavioral training schemes, including EARLY INTERVENTION by teacher specialists who identify dysfunctional students and direct them into either SPECIAL EDUCATION classes or ALTERNATIVE SCHOOLS, where they can no longer come into conflict with the general school population and where they receive one-to-one care and supervision. Some schools provide one-to-

one mentor programs, whereby trained volunteers serve as counselors, “friends” and academic tutors of elementary and secondary school children. Many elementary schools also have formal violence-prevention programs in each classroom, to train children how to deal with anger and other feelings and teach them non-violent solutions to interpersonal problems and provocations.

Virginia (Commonwealth of) Tenth of the original 13 states to join the Union, in 1788. Site of the first permanent English community established in North America—Jamestown, in 1607—Virginia was also the site of the first free school in the Americas, the SYMS SCHOOL, which was founded in 1635 and endowed with a bequest from planter Benjamin Syms. Efforts at establishing educational facilities had begun earlier, however—at least as early as 1619, when Sir George Yeardly, the newly appointed governor, set off from London with instructions from the Virginia Company of London to lay the foundation for “a flourishing state,” which included reserving 10,000 acres at Henrico for the endowment of a college to train the children of the infidels (i.e., American Indians) “in true religion, moral virtue and civility and for other godly uses.”

At the same time, the chaplain of the *Royal James I*, a ship in the East India Company fleet, was attempting to establish a school in Charles City for the children of settlers. The Virginia Company “conceived it most fit to resolve for the erecting of a public free school . . . for the education of children and grounding of them in principles of religion, civility of life and humane learning.” It recommended that the school be called the East India School and “have dependence upon the college in Virginia which should be made capable to receive scholars from the school into such scholarships and fellowships as the said college shall be endowed withal for the advancement of scholars as they

arise by degrees and deserts in learning." Thus started what almost became the first vertically integrated public school system in the United States—from primary school through college. An Indian massacre on March 22, 1622, ended the entire Henrico college project, and settlers abandoned formal education as a priority in favor of the problems of self-defense, agriculture and sheer survival.

Virginia nevertheless remained in the forefront of education during the colonial and early national era. In 1693, the COLLEGE OF WILLIAM AND MARY became the second college founded in the American colonies. Thereafter, the state produced many of the great minds of the colonial era, including GEORGE WASHINGTON, THOMAS JEFFERSON, JAMES MADISON and JAMES MONROE. In 1779, Thomas Jefferson, as governor, submitted to the state legislature a "Bill for the More General Diffusion of Knowledge," which called for universal public education in Virginia—the first such effort in the United States. Jefferson's bill was defeated by rich planters who rejected the idea of paying taxes to educate the poor. Virginia would wait until it drafted a new constitution in 1851 to open its first free, public primary schools. In 1819, however, Jefferson did succeed in convincing the legislature to establish the nation's first public university, at Charlottesville, "to form the statesmen, legislators and judges, on whom public prosperity and individual happiness are so much to depend." When it opened, the University of Virginia offered by far the broadest curriculum of any university in the United States.

Virginia has 15 public and 55 private four-year colleges and universities, including, among the public institutions, the College of William and Mary, the UNIVERSITY OF VIRGINIA, James Madison University (1908), Old Dominion University (1930) and Virginia Military Institute (1839). The private institutions include Hampdon-Sydney College (1776), Randolph-

Macon College (1830) and Sweet Briar College (1901). The state has 24 public and 10 private two-year colleges. As in the rest of the South, blacks and whites attended separate schools until the 1950s and 1960s, when federal courts forced them to desegregate. The state has nearly 2,100 public elementary and secondary schools, with a total enrollment of nearly 1.2 million—37% of them minority students and 7.4% of them living in poverty. In addition, more than 100,000 students attended private schools. Student academic reading proficiency in public schools ranks well above average for the nation: Fourth graders rank seventh and eighth graders rank 10th in that discipline. Virginia's students are a bit less strong in mathematics proficiency—23rd and 14th, respectively—but still comfortably above the national average scores for those age groups.

Virgin Islands A self-governing territory of the United States, consisting of three islands and 50 largely uninhabited islets in the Lesser Antilles chain of the West Indies. Purchased from Denmark in 1917, the largely black population has 36 elementary and secondary schools, with a total enrollment of fewer than 19,000 students. Education is compulsory for all children between the ages of 5 1/2 and 16. The islands have one public, four-year college, the University of the Virgin Islands, which opened in 1962 and has an annual enrollment of 1,000 students. There is one two-year college with about 850 students.

virtual classroom On-line course offerings designed for elementary and secondary school students at schools unable to provide such courses independently. Often part of a broader on-line curriculum, or "virtual high school," the virtual classroom usually provides on-line courses to students within the same state or in geographic regions whose school districts share the same academic requirements for gradua-

tion and whose students ultimately will be subject to the same academic assessment tests. Virtual classrooms have allowed thousands of budget-strapped elementary and secondary schools to expand their course offerings without hiring additional faculty—and to offer ADVANCED PLACEMENT courses for gifted students who have finished their high school curriculum in specific subject areas and are ready to begin freshman college-level work. They have also been valuable to schools in sparsely settled areas, where student enrollment in specific courses such as a foreign language or a physical science often does not warrant hiring a specialist teacher. A low-cost replacement for televised, interactive TELELECTURES, virtual classrooms are interactive, allowing students to question their instructors and “chat” via e-mail with each other, with students in other classrooms and with scholars in other institutions in Web-based “chat rooms.”

(See also COMPUTERS; DISTANCE LEARNING; EDISON PROJECT; INTERNET.)

visiting teacher An archaic term for a school social worker—invented, apparently, to couch the social worker’s role in neutral terms and spare students the stigma of requiring the social worker’s services.

VISTA An acronym for Volunteers in Service to America, a federal program established in 1964 as part of President Lyndon B. Johnson’s War on Poverty. Often called “the domestic Peace Corps.” About 120,000 VISTA volunteers provide a variety of educative services in seven broad fields: community service, economic development, knowledge skills (including the tutoring of out-of-school non-English-speaking immigrants), health and nutrition, legal rights, housing and energy conservation. As in the PEACE CORPS, volunteers live in the communities they serve and receive a small stipend for their services. To qualify, they must be 18 and

have complete command of a required skill. After a brief training period, volunteers must serve one year.

visual discrimination The ability to recognize differences in form between objects, letters, numbers and words. Visual discrimination is essential to successful mastery of reading and calculating skills. Lack of such discrimination may be a sign of either a learning disability or cultural deprivation. Preschool and early elementary school education includes a variety of exercises to enhance and reinforce visual discrimination. There are four basic approaches: distinguishing concrete objects, distinguishing similar-looking letters, distinguishing similar-looking words and matching exercises. Exercises for preliterate children ask them to match round-, square- and other-shaped pegs with appropriate holes and to draw a circle around the one object pictured on a page that is different from all other objects.

Visual discrimination exercises among beginning readers might ask them to underline the letter that is different in the series “a,a,e,a,” or “d,d,b,d.” Slightly more advanced students might be asked to distinguish the word that is different in a short list such as “bat, bat, but, bat.” Still more advanced drills add matching exercises that show students a column of pictures on one side of a paper and ask them to draw a line to the correct, written name in a list on the other side of the paper.

visual impairment In education, blindness or partial sightedness, with blindness defined as a condition requiring the use of BRILLE to read, while partial-sighted students can read large print.

vocabulary development The growth, through a variety of exercises and activities, of the number of words an individual can spell, define and use routinely in conversation and

writing. Word lists, made up of progressively complex words, whose spellings and meanings students must learn at home each week, are the most common, formal vocabulary-development exercise. In-class vocabulary-development exercises usually occur during oral reading, with the teacher stopping periodically to ask students to define each new word they encounter. Instruction and encouragement in the use of reference works, such as dictionaries, encyclopedias and thesauri, are another basic method of in-school vocabulary development.

Vocabulary development begins, however, long before a child enters school, or even preschool. Parents' careful identification of objects by their proper names (as opposed to calling them "things," "bow-wow," "choo-choo" and so on) is a major thrust in early vocabulary development of preliterate youngsters. Indeed, many educators consider the role of the parent, even when talking to infants who are too young to respond, pivotal in the child's vocabulary development. Reading to preschoolers is still another impetus to vocabulary development.

Vocabulary development, continues through life, both in and out of home and school. Experiential learning, during field trips and other cultural experiences, including some films and plays, is an important spur to positive vocabulary development. In contrast, slang, obscenities, and other vernacular commonly heard in schoolyards, during street play, on television and in many films may encourage negative vocabulary development, with single verb forms, such as "ain't," replacing entire conjugations, and even meaningless words or phrases, such as "cool" or "ya know," substituting for precise locution.

vocational counseling The process of providing advice and guidance to help individuals make successful career choices. Although vocational counseling may be based solely on one-to-one interviews, it can be far more extensive

and include lectures by representatives of a variety of professions and occupations or batteries of tests (psychological, personality vocational interest, skill, intelligence and aptitude). In the end, vocational counseling aims at helping the individual make a realistic assessment of his or her goals, personal strengths and weaknesses, interests, skills and aptitudes, and to use that assessment in making appropriate career choices in the light of market needs.

The profession of vocational counseling requires formal training and education, some times at the graduate school level, and, in most states, certification. Most public secondary school guidance departments include at least one member trained in vocational counseling. At the high school level, vocational counseling also involves helping students select the right curriculum to prepare for the vocations they intend following. Vocational counselors also serve in independent and government agencies to advise adults already in the work force and help them obtain retraining, if necessary, or additional education to reinforce existing skills.

vocational education Instruction and training in preparation for entry into crafts and trades not requiring a college degree for entry-level positions and ultimate career advancement. Vocational education in U.S. public schools begins as early as the first year of high school and includes instruction and training in a wide variety of fields, including agriculture, business, office jobs, health-related occupations, home economics, trade and industrial education, technical education and education in various skills and crafts related to construction and mechanics.

Until the mid-19th century, vocational education was conducted through the APPRENTICESHIP system under which children were indentured to master craftsmen. The master served as a surrogate parent for five or more years, teaching the apprentice to read, write



The first public vocational education schools offered manual training in skilled trades such as carpentry. (*Library of Congress*)

and calculate, to know Scripture and to practice a craft with which to earn an independent living. In exchange, the apprentice served as the master's assistant.

Vocational education, as a mass instructional process away from the shop floor, became a necessity as the Industrial Revolution progressed during the 19th century. As mass production developed, the individual craftsman became obsolete. Production of goods shifted from the small shop to huge factories, where hundreds of workers shared the task of production, each performing only one small

task and none learning the entire spectrum of skills required to make a finished product. For a while, children learned from older workers, but as factories grew larger, production became too complex and dangerous to permit novice workers roaming around plant floors. Some companies established vocational schools—some of them astoundingly elaborate—in or near their own plants. Called “vestibule schools,” the first such schools offered future workers formal classroom training before they actually assumed their duties. Although vestibule schools taught new workers basic skills, they

did little to overcome high rates of worker illiteracy that resulted from the lack of compulsory education in the United States. At the time, worker errors stemming from illiteracy and innumeracy were deemed a major factor in the decline in quality and sales of American products on world markets.

In 1882, the Hoe Company, a pioneer manufacturer of printing machinery, became the first company to establish a formal school to train new employees in job-related skills. In 1892, department store magnate John Wanamaker went a step further by organizing the John Wanamaker Commercial Institute in Philadelphia, to give his workers "a working education in the arts and sciences of commerce and trade." The curriculum included "reading, writing, arithmetic, English, spelling, stenography, commercial geography, commercial law, and business methods and administration." New employees attended two mornings a week, while advanced employees spent two evenings a week in school. Wanamaker's success encouraged other major companies to set up similar schools for workers at all levels. In 1900, General Electric Research Laboratory set up an educational program for its scientific and technical workers. Westinghouse Research Laboratory followed suit in 1903, as did American Telephone and Telegraph Co. in 1907. Bell Telephone Company, meanwhile, sponsored a host of vestibule schools to train telephone installers and operators in what was then the radically new telephone technology.

In 1908, International Harvester Company, the big farm equipment manufacturer (now Navistar), started a school for apprentices that soon included courses ranging from mechanical drawing to shopwork. The school willingly taught any course for which five or more employees enrolled. By 1913, there were enough corporation-operated schools to form a National Association of Corporation Schools. Although their growth was halted by World

War I, they proliferated in the 1920s. Bell Laboratories, the research arm of American Telephone & Telegraph, expanded its vestibule schools into a mammoth, company-wide human resources department, with an annual budget in the billions of dollars and facilities that ranged from individual classrooms in local telephone company offices to a university-style campus in Lisle, Illinois.

After World War II, General Motors Corporation carried the corporation school concept a step further by building the degree-granting General Motors Institute in Flint, Michigan. Now the independent Kettering University, the former institute enrolls more than 2,500 students in its five-year programs leading to bachelor of science degrees in engineering, with specialties in manufacturing, mechanical engineering, industrial engineering and electronic engineering. Students alternate 12 weeks on campus and 12 weeks on the job. About 17% of the students are women. (See KETTERING FOUNDATION.)

Although corporation schools provided exceptional vocational education to hundreds of thousands of workers, such education was limited to employees of the largest, most elite members of American industry. Smaller firms could hardly afford to establish similar educational facilities, and it became clear to academicians and industrialists alike that schools would be needed to educate workers in various trades and skills. The first such school was established in 1868—in Russia. Called the Moscow Imperial Technical School, it was headed by Victor Della Vos, who had developed an entirely new pedagogical approach to industrial education. He and his colleagues had analyzed the skills required for each basic craft and trade and organized them in order of ascending difficulty so that they could then be taught to students in that order. Using drawings, models and tools, teachers at the institute taught each trade, step by step, putting students

through a series of graded exercises until they arrived at a basic skill level that would allow them to enter apprenticeships.

The Della Vos method of manual training, as vocational education was called, was first displayed abroad in the Russian exhibit at the Philadelphia Centennial Exposition in 1876. At the time, American educators had been searching for ways to introduce vocational education into the school curriculum to help prepare students for the industrial age. The two leaders of the vocational education movement were Massachusetts Institute of Technology president John D. Runkle and Washington University professor Calvin M. Woodward. Both found in the Della Vos exhibit "the philosophical key to all industrial education," and they became the chief proponents of the new branch of education called "manual training." Urging its introduction into every high school curriculum, they envisioned the Della Vos system as a means of making schools meet the changing needs of an industrial society. They also saw it as a way of making schools more attractive to the huge number of children of immigrant laborers arriving in the United States, whose educational ambitions pointed them toward skilled trades and immediate, paying jobs rather than long, extended periods of study in academies and universities.

In 1880, St. Louis public high schools were first to respond, and the first schools devoted exclusively to manual training appeared four years later. The term *manual training* began to disappear in the 1930s, as vocational schools extended their curricula beyond individual crafts, such as woodwork and metalwork, to industrial instruction requiring multiple skills, as in the aviation and automotive trades. Although enrollment in secondary school vocational education climbed during the economic depression of the 1930s, it began declining after World War II. In 1982, nearly 16,000 public high schools offered vocational education,

but only 26.9% of high school students were enrolled in vocational education programs. And by 1992 the figure had plunged to less than 12%.

Ironically, the decline in enrollment rates came at a time when the market for skilled workers—precision, production, craft and repair workers—was expanding. Indeed, the U.S. Department of Labor forecast creation of 5 million new jobs for skilled workers by 2005. With acute shortages of skilled workers appearing across the United States, the Department of Education established a Commission of Secondary Vocational Education, which urged abandonment of the traditional vocational education track that isolated vocational education students from students in the academic track. The commission found that most industrial trades and crafts had become so complex that skilled craftsmen required the full complement of high school academic courses in the language arts, mathematics, computer science and the natural sciences.

The net result was a total reform of vocational education programs. Instead of enrolling in vocational education in ninth grade, students intent on learning a craft or trade enrolled in traditional academic courses with college-bound students during the first two years of high school. Helping spur reforms was the High Schools That Work initiative in Atlanta, Georgia, which launched a nationwide program to help vocational schools strengthen their academic curricula and instructional standards. By 2000, more than 1,000 schools in half the states had adopted the program and watched their vocational education students begin to exceed the national averages in reading, mathematics and science on tests administered by the NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS. Then, in their last two years, they may enroll in intensive vocational education curricula called TWO-PLUS-TWO OR TECH-PREP PROGRAMS. Usually tied

to a local community college, such programs are, in fact, four-year programs that lead to both a high school diploma and an associate degree or certificate in a particular field. In a variation on two-plus-two, many high schools have established cooperative vocational education programs that tie vocational education during the last two years of high school to training or apprenticeship programs at local industries, some of them federally financed. In some cases, companies set up vocational training programs at nearby community colleges, thus making two-plus-two training a three-way partnership among vocational high schools, community colleges and industry. By 2005, nearly 6,000 U.S. institutions of higher education had established thriving cooperative education programs in conjunction with an equal number of major American corporations. About 1,000 of those institutions also were operating tech-prep, or two-plus-two programs in 21 states for more than 1.25 million high school students, or 9.4% of the public high school student population in the United States.

In addition to school- and college-sponsored vocational education, more than 2,000 private, for-profit, proprietary or ENTREPRENEURIAL SCHOOLS offer vocational training—usually in a single field, for jobs such as barbering or bartending that require several weeks of intensive study to prepare for the workplace. And, despite the growth of formal instruction in schools, vocational education still goes on in thousands of in-plant, employer- and union-sponsored apprenticeship and industrial training programs. Most require about 2,000 hours of on-the-job training plus related study in classrooms, by correspondence or through self-instruction. More than 800 categories of apprenticeship programs are officially recognized and accredited by the Department of Labor's Bureau of Apprenticeship and Training and by the 50 states.

Vocational Education Act of 1963 A federal law that called for expansion of existing high school vocational education programs, the creation of new ones and the creation of work-study programs available for full-time vocational education students. Unfortunately, the act remained underfunded for two decades and had little effect on vocational education in the United States until 1984, when Congress passed the Perkins Vocational Education Act, which provided more than \$800 million in grants to the states for vocational education. By 2002, the total had grown to more than \$461.8 billion. In 2006, however, President George W. Bush eviscerated the program temporarily by slashing \$12.7 billion from student loan subsidies.

vocational rehabilitation The training or retraining of the physically or mentally disabled to adapt their capabilities to appropriate jobs in the workplace. Vocational rehabilitation includes diagnosis, medical care, physical and psychological therapy, vocational counseling, testing, training for a specific vocation, tuition for formal education and training, books and equipment and, if needed, transportation, housing, supervision and special aides. A host of privately operated social service agencies and hospitals offer specialized vocational-rehabilitation services, as do governmental agencies in all 50 states and several U.S. government departments, including the Department of Defense.

vo-tech (vocational-technical) school A specialized, two-to-four-year high school where all students concentrate on some form of vocational education. Although all students receive the same, fundamental academic instruction of conventional high schools, vo-tech schools offer far more intensive, in-depth training by skilled craftspeople than conventional vocational education programs in comprehensive high schools. Vo-tech students emerge more

skilled in academics as well, continually studying applied variations of English, mathematics, science and other academic subjects in conjunction with their vocational education (see APPLIED STUDIES). Employers, as a result, generally respect the credentials of vo-tech graduates more than they do those of students in conventional high school vocational-education programs.

Often called "technology academies," vo-tech schools usually maintain strong job-placement programs and close ties to local and regional employers. Student self-esteem in vo-tech schools is usually higher than that of students in vocational education in comprehensive schools because the entire administration and faculty focuses entirely on technical studies. In comprehensive high schools, vocational education is often held in low esteem by administrators, who tend to assign less able teachers to vocational education students than to students in the academic, college-preparatory track.

Still another advantage of vo-tech education over conventional vocational education is the time and opportunity to sample many trades and occupations before deciding on a specialty. Superior vo-tech schools offer a score of prevocational courses that offer students an in-depth look at "career clusters," such as agriculture, manufacturing, public service and other broad categories; and students then examine hundreds of specific jobs within each cluster. A result is that vo-tech graduates tend to be more committed to and skilled in the trades they select, and understand the nature of those trades in the larger environment.

vouchers See SCHOOL VOUCHER.

V-12 A World War II, U.S. Navy program that permitted college students drafted into the military to finish their undergraduate and graduate education before entering military service. Designed to provide the Navy with a much needed corps of officers, doctors, engineers and other specialists, V-12 was an accelerated, year-round program that combined education with on-campus training, akin to that of the UNITED STATES NAVAL ACADEMY, at Annapolis, Maryland. During World War II, American colleges and universities contracted to be associated with either the Navy V-12 or the ARMY SPECIALIZED TRAINING PROGRAM. The two programs were virtually identical, except for the military training and the ultimate service destination for trainees. Depending on whether they were training to be future soldiers or sailors, students transferred with their soldier/sailor classmates to colleges that had been taken over by one or the other service. Regardless of the college they eventually attended, they received degrees from the colleges where they had originally enrolled.

Like ASTP, V-12 offered 22 programs of study during its existence, including engineering, medicine, dentistry, personnel psychology and foreign languages. Those who completed bachelor's degree programs either entered the Navy as ensigns or continued their graduate studies to become doctors, lawyers or engineers before serving in the Navy in those capacities. Like ASTP, which was a progenitor of the post-World War II Army Reserve Officers Training Corps, V-12 eventually became the NAVAL RESERVE OFFICERS TRAINING CORPS.

Wald, Lillian D. (1867–1940) American public-health nurse and social reformer. A pioneer in special education, Wald founded New York's first settlement house and was responsible for establishing the world's first public nursing program. Born in Cincinnati, Ohio, she applied for admission to Vassar at age 16, but was rejected as too young. Instead, she attended a course in nurses' training at New York Hospital and studied at Woman's Medical College, both in New York City. While there, she helped set up nurses' classes for immigrants on the Lower East Side, but was so appalled by the area's poverty, its lack of public-health care and its hordes of idle youngsters roaming the streets, that she and a companion obtained funds from philanthropist-banker Jacob H. Schiff to found the Nurses' Settlement in 1895.

At first, the role of the Nurses' Settlement was limited to training immigrants in nursing and social work, but it soon expanded to meet the needs of area residents for public nursing services. The first settlement house in New York, it was renamed the HENRY STREET SETTLEMENT and once again responded to neighborhood needs by expanding services to include day care, recreation programs, clubs for children and educational programs in citizenship and English. At the time, there were an estimated 200,000 homeless children in New York, and Wald discovered untold thousands

more uncared-for children locked in apartments by fearful immigrant parents who worked 12 or more hours a day, seven days a week and wanted to protect their children from the streets. Wald's project was an overwhelming success, with thousands of parents flocking to Henry Street for care. The Henry Street Settlement subsequently grew into one of the major, private social-service agencies in New York City, with far-reaching educational programs for children and adults of all ages, day-care programs, senior citizens' centers, homecare services, theater groups, arts programs and a host of other social services reaching beyond the immediate neighborhood into deprived areas throughout the city.

In 1902, Wald extended public nursing from the settlement house into a nearby public school. The project was so successful that Wald was able to influence the New York City Board of Health to establish a citywide public school nursing program—the world's first. A close friend of philosopher and educator JOHN DEWEY at Teachers College, Columbia University, she was influential in the establishment of a department of nursing and health at that institution. She also succeeded in convincing the New York Board of Education to establish special, ungraded classes—the forerunners of special education—in public schools, in which learning-disabled students might proceed at their own pace.



Lillian Wald (*Library of Congress*)

A pioneer in the movement to establish public PLAYGROUNDS, she was a vocal supporter of children's rights and woman suffrage, and, with Florence Kelley, originated the idea for the UNITED STATES CHILDREN'S BUREAU to serve as a federal advocate for children. She was also active in the peace movement during World War I and a staunch supporter of women's labor unions. She wrote two books—*The House on Henry Street* (1915) and *Windows on Henry Street* (1934)—both of them autobiographical.

Waldorf schools A group of more than 800 independent schools in 62 countries, founded on the principals outlined by Austrian scientist and philosopher RUDOLF STEINER. Although

unaffiliated, all have some common characteristics, and about 175 schools in North America are affiliated with an umbrella service organization, the Association of Waldorf Schools of North America. The Waldorf school "movement" originated in 1919, in Stuttgart, Germany, where the owner of the Waldorf Astoria cigarette factory asked Steiner to establish and operate a school for the children of company employees. Steiner agreed but insisted on four conditions considered radical for that era, namely, that the school be coeducational; that it be open to all children, regardless of social class; that it be a unified 12-year school and that it be controlled entirely by teachers, free of influence by the state or economic interests.

Steiner held to a rather vague, mystical philosophy in which learning is the product of a child's natural, human spirit and various degrees of learning take place to the extent that the child's spirit remains unfettered by externally imposed restrictions, including religion. Steiner's legacy for today's Waldorf schools is an educational approach that leaves preschoolers and kindergartners completely free to play and explore in surroundings that encourage "meaningful imitation" and "creative play." Rich with toys, games and equipment that feed their creative urges, Waldorf nursery-kindergartens essentially teach through indirection, allowing children to play at whatever they choose and learn from such activities as cooking, building houses, singing, painting, coloring and role playing. Waldorf elementary schools focus on the child's imagination as a primary vehicle for learning—even to the extent of using students in costume to represent numbers in skits about various arithmetic functions. "Whatever speaks to the imagination and is truly felt," says a Waldorf schools brochure, "stirs and activates the feelings and is remembered and learned. The elementary years are the time for educating the 'feeling intelligence.'"

One radical element in Waldorf elementary education is the continuing relationship between a class and its main teacher from year to year—whenever possible—and throughout the elementary school years. The lasting relationship between students and their teacher over six to eight years helps form a strong child-teacher-parent bond and a stable emotional and intellectual foundation during critical years of development. The long-lasting relationship is also beneficial to teachers, who can teach new materials and escape the tedium of repeating the same lessons year after year.

Still another unusual aspect of Waldorf elementary education is the presentation of the curriculum. Instead of giving each topic equal time each day throughout the school year, the day begins with a long, uninterrupted lesson focusing on one subject in depth. Running as long as two hours, the main lesson ties one topic to as many disciplines as possible. Only after the main lesson does the teacher conduct shorter lessons in other subjects. The main lesson may deal with the same subject for several days, before it turns to another subject and relegates the first topic to the shorter lessons of the day.

At the high school level, specialist teachers take over student education, but the curriculum continues to be built around a long lesson each day, focusing on a single subject for several weeks. Designed as a “spiral curriculum,” the year progresses with in-depth study for several weeks of, say, mathematics, tying it peripherally each day to allied topics—physics, chemistry, home economics and consumerism—each of which is studied separately in shorter classes later in the day. After a few weeks, one of the peripheral topics becomes the main topic, with peripheral ties to all other subjects studied. The result is that all subjects are studied in relation to all other subjects. Students learn what historic events were occurring as Shakespeare wrote *Hamlet*, what music New-

ton might have listened to as he made his discoveries and what scientific developments were occurring as Jefferson drew up plans for the University of Virginia. The curriculum is, in effect, integrated, with no subject taught in a vacuum.

Wallace v. Jaffree A 1985 United States Supreme Court decision that declared unconstitutional an Alabama law authorizing a daily, one-minute period of silence in public schools “for meditation or voluntary prayer.” The law was challenged by Ishmael Jaffree, of Mobile, an agnostic who objected to the exposure of his children to religious practices in public schools. The Court agreed that the Alabama law endorsed religion as a “favored practice” and declared that such an endorsement is not consistent with the established principle that the government “must pursue a course of complete neutrality toward religion.”

Wanamaker, John (1838–1922) Businessman, merchant and pioneer in corporation-sponsored vocational education. Born in Philadelphia, he started working as a delivery boy at 14, entered retailing at 18 and, with his brother-in-law, founded a clothing store at 23. Within a decade, John Wanamaker and Company of Philadelphia had become the leading men’s clothier in the United States. In 1876, he expanded into an old freight depot and invited merchants in other, nonclothing lines to set up small specialty shops under the same roof and create “a new kind of store.” They refused, and he established the shops himself a year later, introducing the world’s first department store.

In 1896, he bought a store in New York, replicated the Philadelphia store and, after adding more branches, built one of the world’s largest retail empires. By then he was hiring so many new employees that he decided it would be in his own and their interest to assure their knowledge of retail operations. What started as

training classes for clerks at the Philadelphia store quickly evolved into the John Wanamaker Commercial Institute, a school of business methods "giving daily opportunities to obtain a working education in the arts and sciences of commerce and trade." The first school of its kind in the United States, it had a faculty of 24 teachers to teach a curriculum that included reading, writing, arithmetic, English, spelling, stenography, commercial geography, commercial law and business methods. New workers spent two mornings a week in school and more advanced employees two evenings a week, after eating a free supper in the employee cafeteria. Boys and girls were organized into drill teams to learn "discipline, organization, precision and obedience" while obtaining "health lessons of muscular training that give bodily strength without which successful mental work is impossible." Wanamaker boasted that the institute paid for itself. "Unintelligent and wasteful labor has lessened. The wisdom of cooperation and mutual helpfulness has been recognized. Knowledge of merchandise, its production, distribution and uses has been increased. Principles of control and government and organization have developed."

Wanamaker's paternalistic training program combined with relatively generous fringe benefits and security to build a level of employee efficiency, loyalty and longevity on the job that few companies could claim. His success inspired companies such as General Electric, Westinghouse, American Telephone & Telegraph, International Harvester and Bell Laboratories to set up similar worker schools. By 1913, there were enough corporation-operated schools to form a National Association of Corporation Schools; although their growth was halted by World War I, they proliferated in the 1920s. "Corporations are realizing more and more the importance of [worker] education in the efficient management of their business," said the National Association of Corporation Schools statement of objectives.

"The Company school has been sufficiently tried out as a method of increasing efficiency to warrant its continuance as an industrial factor." Ironically, after American companies began abandoning the paternalistic Wanamaker formula during the depression of the 1930s, Japanese industry would later adopt it in the years following World War II and make it a cornerstone of superior performance.

Ward, Lester Frank (1841–1913) American sociologist and educator, considered by many the "father" of modern sociology. Born in Illinois and raised in poverty on farms in Illinois and Iowa, he was self-taught until he reached college age, when he enrolled in a series of colleges, eventually earning a law degree at Columbia University in New York. Although working as a paleontologist and geologist, he published the seminal two-volume work *Dynamic Sociology* in 1883, in which he proposed education as the "great panacea" for the social ills of the day. He called on government to make education its highest priority and declared that the final stage in the evolution of a truly democratic state would depend on "a system for extending to all the members of society such of the extant knowledge of the world as may be deemed most important."

Ward's book drew little notice at first, with fewer than 500 copies of the first edition sold. But a decade later, in an era when the questions of educating women and the children of the poor were at the center of heated debates among educators and political leaders, *Dynamic Sociology* was rediscovered in 1896, and the second edition made Ward a standard-bearer for egalitarianism and elevated him to the status of prophet in the fields of sociology and education. The book was the first to offer a scientific basis for the burgeoning social reform movement under way in the United States and for the growing demands for an end to child labor, compulsory education through adoles-

cence, educational rights for women and woman suffrage.

Ward's book stated unequivocally that there were no race, gender or social-class differences in intellect. Going a step further, he unveiled a theory that not only expounded the intellectual and social equality of women with men but even suggested that women might well be superior to men. The book became a "bible" of sorts for progressivists. Hailed by sociologists for raising their subject to the scientific level, he was named president of the Institut International de Sociologie in 1903, and when the American Sociological Association was organized in 1905, Ward was elected its first president. Ward was named the first professor of sociology at Brown University the following year, and his work continued to influence social and educational thought throughout the early years of the 20th century.

War on Poverty A far-reaching program of federal legislation developed in the mid-1960s by the Lyndon B. Johnson administration to reduce poverty. The program expanded educational opportunities to the poor on a scale never before seen in the United States, opening up preschool education to millions of economically and educationally deprived children and expanding opportunities for vocational education and higher education to millions of poor adolescents and adults.

Johnson declared an "unconditional war on poverty" in his State of the Union address to Congress on January 8, 1964, "not only to relieve the symptoms of poverty, but to cure it and, above all, to prevent it." Planning for the war had actually started two years earlier, when President John F. Kennedy had asked his Council of Economic Advisors to obtain data on the "poverty problem." At the time, *The Other America: Poverty in the United States*, a book by Michael Harrington, had shocked the nation by contradicting the popular notion of the

United States as an "affluent society." It presented indisputable evidence that between 40 million and 50 million people—about 25% of American society—lived in poverty.

After Kennedy's assassination, Johnson picked up the banner of the antipoverty movement as his own and spurred the Council of Economic Advisors to accelerate its studies and recommend legislation. The first result was the Economic Opportunity Act of 1964, followed a year later by the ELEMENTARY AND SECONDARY EDUCATION ACT and the HIGHER EDUCATION ACT. The Economic Opportunity Act created the Job Corps, UPWARD BOUND, the NATIONAL YOUTH CORPS and VISTA, the last a domestic equivalent to the PEACE CORPS and the other programs designed to provide job training and work for unemployed, socioeconomically deprived adolescents. The act created myriad education and job-training programs for adults and WORK-STUDY programs that would allow college students from low-income families to earn money from on-campus jobs. Beyond these efforts, the Economic Opportunity Act also created community-action programs, the most far-reaching of which was HEAD START, which provided preschool education to millions of children in low-income areas across the United States.

The Elementary and Secondary Education Act, inter alia, provided remedial and other special education to socioeconomically deprived youngsters, while the Higher Education Act created the TEACHER CORPS to improve the quality of teaching in schools in economically deprived areas.

Although the War on Poverty produced many permanent, far-reaching changes in American education, it had virtually no success in reducing poverty. A decade later, the program's administrative bureaucracy, the Office of Economic Opportunity, was disbanded and many of its programs abandoned. Those that survived were placed under the jurisdiction of other departments. Abandonment of the formal War

on Poverty, however, did not mean an end to government efforts at both the federal and state levels to address the problem of endemic poverty in the richest nation on earth, and, by 2000, an unprecedented economic boom finally reduced poverty rates to 11.3% (about 31.6 million people), from more than 15% in 1993 and more than 22% at the beginning of the War on Poverty. The year 2000, however, also saw a surge in the number of poor immigrants entering the country, legally and illegally, with a consequent increase in year-to-year poverty rates—from 11.3% in 2000 to 11.7% in 2001 and 12.1% in 2002.

Washburne, Carleton Wolsey (1889–1968) American educator who pioneered the development of preschool education, programmed instruction, ability-graded children's books and advanced teacher training. Born in Chicago, Washburne was educated in the University of Chicago and Hahnemann Medical School laboratory schools directed by famed educators John Dewey and Francis Parker. Both were also personal friends of Washburne's mother, a child-study lecturer with a deep interest in education, which she passed on to her son.

After earning his B.A. at Stanford University and Ed. D. at University of California, Washburne taught in a rural school in California before becoming the science department head at San Francisco State College for Teachers in 1914. In 1919, he assumed the superintendency of schools in Winnetka, Illinois. Over the next quarter-century, Washburne gained a national reputation as an educational innovator. Under his direction, Winnetka's school system became the first in the United States to make widespread use of PROGRAMMED INSTRUCTION. With the help of his faculty, he introduced the nation's first public, prekindergarten, early-education programs for three- and four-year-olds and established the nation's first guidance

programs, complete with school psychologists, psychiatrists and psychometrists, for elementary school children. He introduced individualized reading instruction, which helped slower and learning-disabled students keep up with their peers. He published the school's educational materials at the local Winnetka Education Press, which adopted his system of age-grading children's books according to ability levels. Other children's book publishers quickly adopted the system.

He also founded and obtained a charter for the Graduate Teachers College of Winnetka, where he trained graduates of liberal arts colleges for teaching. His program led to the establishment of similar master's degree programs in education at large universities across the United States. During World War II, he worked with the United States Army and the Department of State, then with the United Nations Educational, Scientific and Cultural Organization. He was director of the teacher education program at Brooklyn College from 1949 to 1960 and distinguished professor of education at Michigan State University from 1961 to 1967. He was the author of *Adjusting the School to the Child* (1932).

Washington The 42nd state to join the Union, in 1889. Although the first school was established in 1832 at Fort Vancouver, Washington was largely a hunting, trapping and fur-trading area until after the U.S. and British claims to it were settled in a treaty in 1846. Separated from Oregon in 1853, Washington had only about 4,000 white inhabitants. A public, territory-wide school system for white children was established in 1881, and the current state public school system was established in 1895.

The state has 2,233 public elementary and secondary schools, with a total enrollment of more than 1 million students, 26.5% of them minority students and more than 12% living in

poverty. Student proficiency in reading and writing is well above average for the nation; fourth graders are comfortably among the top 20 states, and eighth graders score ninth in the nation in math proficiency. Washington has been a continual innovator in vocational education, having created 22 two-year, vocational-technical, or VO-TECH, programs at the state's 35 public community colleges. (There are also three private two-year colleges.) The state has 11 public and 32 private four-year institutions of higher education, including the University of Puget Sound and Gonzaga University. The graduation rate of the more than 145,000 students at four-year colleges is a remarkable 63%.

Washington, Booker T. (1856?–1915)

Pioneer African-American educator, founder of TUSKEGEE UNIVERSITY and tireless negotiator for peace between the races in the United States, for which he became known as the "Apostle of Accommodation." Washington wrote that he was "born a slave of a plantation in Franklin County, Virginia. I am not sure of the exact place or exact date of my birth, but . . . I suspect I must have been born somewhere and at some time." After Union troops freed him and his mother in 1863, they moved to West Virginia, to a cluster of former slave quarter cabins surrounded by "intolerable . . . filth." Working in nearby salt mines from 4 A.M. to 9 A.M., he managed to attend school for a few hours each day before returning to the mines for a second two-hour shift in the afternoon. When he enrolled in school, he realized that, like many slaves, he did not know his last name. He simply chose the most impressive one he could think of—Washington. (He later learned from his mother that his family name was Taliaferro, which became his middle name.)

At 16, he overheard a group of miners "talking about a great school for colored people somewhere in Virginia" and decided to find it. After a trek of many weeks, he arrived, unbathed,

in rags and penniless, at the HAMPTON INSTITUTE, a vocational school founded by General SAMUEL ARMSTRONG to give former slaves the necessary education and skills to earn a living. Handed a broom and asked to sweep a classroom as a measure of his willingness to work, Washington described the experience in his autobiography as "my college examination, and never did any youth pass an examination for entrance into Harvard or Yale that gave him more genuine satisfaction." In addition to learning basic academic skills at Hampton, he discovered what he called "a new world. . . . The matter of having meals at regular hours, of eating on a tablecloth, using a napkin, the use of the bathtub and tooth brush, as well as sheets upon the bed, were all new to me."

Washington graduated from Hampton in June 1875, at the head of his class, and returned to West Virginia to open a "colored school." It



Booker T. Washington (*Library of Congress*)

remained open day and night, seven days a week, teaching blacks of all ages. After two years, he went to Washington, D.C., for a year of study of advanced academics before returning to Hampton to teach. In 1881, he was asked to start a normal school to train black teachers in Tuskegee, Alabama. Within a year, he raised \$500 to buy an old plantation, with a kitchen, a stable and a hen house. Washington's classroom leaked so badly that a student held an umbrella above his head to permit him to teach when it rained. Planning to train his students to be teachers and leaders who would educate other African Americans, he found his students so poor and uneducated he had to teach "something . . . besides books. We wanted to teach [them] how to bathe; how to care for their teeth and clothing. We wanted to teach them what to eat, and how to eat it properly, and, how to care for their rooms."

In addition, Washington taught his students as many trades as possible, saying "the whole future of the Negro rested largely upon . . . whether or not he should make himself, through his skill, intelligence and character, of such undeniable value to the community in which he lived that the community could not dispense with his presence." Any individual, he wrote, "who learned to do something better than anyone else—learned to do a common thing in an uncommon manner—had solved his problem, regardless of the color of his skin." He told his students that they would find honor and respect to the extent that their knowledge and skills "added something to the wealth and comfort of the community."

Washington made work an essential part of student and faculty life at Tuskegee. In addition to agricultural and domestic work, students learned every aspect of construction, from design and architecture to masonry, carpentry and roofing. They learned to harvest trees, mill their own lumber, manufacture their own bricks, make their own clothing, mattresses,

bedding and upholstery, build their own desks, chairs and furniture, grow their own food and raise and slaughter their own livestock.

Within months, Tuskegee Normal and Industrial Institute, as it was first called, was a self-sufficient community with enough profit from surplus production to allow students to attend school full time, without working at off-campus jobs. Over the next 40 years, 40 buildings rose on the Tuskegee campus. All but four were "almost wholly the product of student labor." A brilliant public speaker, Washington traveled the nation raising millions of dollars to expand Tuskegee and provide scholarships for those who sought an education there. Thousands flocked to his and other, similar schools that were rising throughout the South. "It was a whole race trying to go to school. Few were too young, and none too old to make the attempt to learn. As fast as any kind of teachers could be secured, not only were day schools filled, but night schools as well."

Everywhere he traveled and to everyone who listened, Washington carried the same message: The path to political and social equality for African Americans lay in industrial education, development of skills, land ownership, hard work and development of good habits such as thrift, cleanliness, ethical and moral behavior, patience and good manners. His inspiring speeches and the logic of his social and educational theories earned him national and, eventually, worldwide attention. Called the "Negro Moses" for leading his people toward a "promised land," he attracted huge sums for his institution—\$20,000 from steel magnate Andrew Carnegie and \$50,000 from a railroad tycoon.

In 1895, Washington's influence reached its peak, and he was invited to make one of the opening day speeches at the Cotton States International Exhibition, a commercially sponsored world's fair in Atlanta, Georgia, in a region that was desperately seeking to emerge

from an economic depression by promoting international trade. It was the first time in American history that an African American sat, stood and spoke on the same platform with white southern men and women. Called the "Atlanta Compromise," his speech became the most momentous proclamation on race relations since the Emancipation Proclamation itself. Reminding his audience that African Americans made up one-third of the South's population, he warned that "nearly 16 millions of hands will aid you in pulling the load upward, or they will pull against you the load downward. We shall constitute one-third and more of the ignorance and crime of the South, or one-third of its intelligence and progress."

He pledged that if they received educational opportunities, African Americans would stand by their country "with a devotion that no foreigner can approach, ready to lay down our lives, if need be, in defense of yours, interlacing our industrial, commercial, civil, and religious life with yours in a way that shall make the interests of both races one. In all things purely social we can be as the fingers, yet one as the hand in all things essential to mutual progress. There is no defense or security for any of us except in the highest intelligence and development of all."

After his speech, crowds of white dignitaries rushed to shake his hand. Newspapers across the United States, Canada and western Europe published his speech in full. Counteracting the terrifying (to whites) calls from some black leaders for social revolution, Washington had called for economic and social evolution. While calming the fears of whites, he had offered a way for blacks to fulfill their hopes through education and job opportunities. "It is important and right," he said, "that all privileges of the law be ours, but it is vastly more important that we be prepared for the exercises of these privileges. The opportunity to earn a dollar in a factory just now is worth infinitely

more than the opportunity to spend a dollar in an opera house."

Following the Atlanta speech, Harvard University awarded Washington an honorary master of arts degree, the first ever conferred on an African American. Washington called it "a recognition that had never entered into my mind, and it was hard for me to realize that I was to be honored by a degree, from the oldest and most renowned university in America. As I sat . . . with this letter in my hand, tears came into my eyes. My whole former life—my life as a slave on the plantation, my work in the coal mine, the times when I was without food or clothing, when I made my bed under a sidewalk, my struggles for an education . . . the ostracism and sometimes oppression of my race—all this passed before me and nearly overcame me." Washington and his wife were subsequently invited to visit diplomats and royalty in Europe and Britain, where he attended Parliament and met Queen Victoria. In 1901, President Theodore Roosevelt invited him to be the first African American to dine at the White House.

Despite its impact on some Americans, Washington's Atlanta Compromise failed to halt the race riots and lynchings plaguing the South. In the face of government inaction, voices of other black leaders called for equal political and social rights. Rather than learning skilled trades that would leave them in the service of whites, blacks must obtain academic and professional education, said such activists as W. E. B. DuBois. The DuBois-Washington debate grew into a bitter controversy. Washington railed against the political agitation that DuBois was fomenting.

Northern sentiment continued to support Washington. By late 1915, he had built Tuskegee's endowment to about \$2 million and its physical plant to more than 100 buildings, spread over 25,000 acres, with a faculty of nearly 300 and a student body of more than

1,500, learning more than three dozen trades. Tuskegee served as a model for 40 other such colleges and universities that continue to educate African Americans. Washington also founded the National Negro Business League to give African Americans the training to set up their own businesses. The South, however, refused to accept the Atlanta Compromise. Where employers offered work to blacks, they paid sub-par wages that put whites out of work, inflamed racism and led to riots and uninhibited assaults and persecution of blacks, whom white law enforcement authorities refused to protect. After Washington's death, most blacks also began abandoning the principles of the Atlanta Compromise. Discouraged by oppression, they turned instead to the activism that, at the time, was personified by W. E. B. DuBois.

Washington, George (1732–1799) First president of the United States and an advocate of the much-debated principle of the need for universal education in a society of self-governing people. Though hardly outspoken in support of pro-education at the time of the Constitutional Convention, Washington did, in 1796, advocate establishing a national university in the capital city to train those bound for public office. The concept of a national university had been proposed earlier by THOMAS JEFFERSON, JAMES MADISON and others who had unsuccessfully battled for constitutional guarantees of universal public education. Although Washington had little influence over education during his two terms in office, from 1789 to 1797, he did undertake "rational experiments" for imparting the "blessings of civilization" to Indians. Backed by congressional passage of several "trade and intercourse acts," he appointed agents to live among Indians to teach them agricultural and domestic skills and help them establish and maintain factories and trading houses. Aimed also at protecting them from exploitation by illegal traders, Washing-

ton's program sought to teach Indians the "discipline" of private ownership and agriculture in order "to promote civilization among the friendly Indian tribes and to secure the continuance of their friendship."

Watson, Elkanah (1758–1842) Businessman, banker, agriculturalist and founder of the Berkshire Agricultural Society, a vital educative institution at a time when there were no agricultural colleges. Born in Massachusetts, Watson had made and lost several fortunes as a merchant, a developer of canal transportation and a banker. It was in this last calling that he finally found success in the early 19th century as founder of the Bank of Albany and the New York State Bank. His earnings allowed him to retire and "seek the satisfactions of rural felicity" in Pittsfield, Massachusetts, where he purchased a large farm at the age of 50.

Deciding on experimenting with the latest principles of English scientific agriculture, he purchased a pair of prized Merino sheep, whose wool was of such exceptionally high quality that he decided to display them in the public square in Pittsfield. "Many farmers, and even women," he wrote, "were excited by curiosity to attend this first novel, and humble exhibition. It was by this lucky accident, I reasoned thus: If two animals are capable of exciting so much attention, what would be the effect on a larger scale, with larger animals? The farmers present responded to my remarks with approbation." The result was the idea of the modern agricultural fair, according to Watson. After three years of cooperative, scientific breeding, Watson and 26 of his neighbors sponsored the Berkshire Cattle Show, which became a heavily attended annual event. A year later, in 1811, they formed the Berkshire Agricultural Society, which expanded the annual show into an agricultural fair, with a wide variety of displays of livestock and agricultural products. Patriotic and religious oratory, marches, processions

and dances were added to make it more festive, but Watson's original purpose of educating farmers by teaching them to use scientific principles remained the fair's central purpose. Entertainment encouraged farmers to come to the fair with their families, but the exhibits taught them how to improve their farms. Watson began writing letters and pamphlets and traveling the country to promote the "Berkshire plan" and encourage the establishment of similar agriculture societies across the United States. His efforts eventually made the agricultural fair a perennial fixture in American life and an important element in the continuing education of the American farmer.

Watson, John Broadus (1878–1958)

American psychologist and founder of the behaviorist school of psychology that held personality, behavior and learning to be the result of training and conditioning rather than heredity. A major influence on education, Watson's theories implied that any child who is not born brain-damaged could be trained and taught to do and be anything.

Born and raised in South Carolina, he graduated from Furman University in Greenville, went to the University of Chicago to earn his doctorate in 1903 and remained there as an instructor in experimental psychology for five years. He then became a professor of experimental and comparative psychology at Johns Hopkins, where in 1913 he published the paper that created the behaviorist school: "Psychology as the Behaviorist Views It." Until then he had studied conditioned learning, with rats in mazes, and learning by imitation among monkeys. In 1917, however, he began studying infants to prove his theories of learning, but the experiments were cut short when the publicity of a bitter divorce suit forced him to resign. He went into advertising. Applying his theories of learning, he scored so many successes that, by 1924, he was named a vice pres-

ident of the I. Walter Thompson Company, one of the world's leading advertising agencies. Although he continued writing on behaviorism and lecturing at the New School for Social Research, his efforts to return to university life were continually blocked. In spite of this rebuff, behaviorism remained a major force in experimental psychology and in education during the remainder of his life.

Watts, Isaac (1674–1748)

English theologian, educator, hymn writer and author, whose works were highly influential in shaping American education during the early 18th century. Born to a nonconformist family, which, like other Puritans, suffered persecution, he was an assiduous student of the works of John Locke. He served as a tutor to the children of well-to-do dissenters and as pastor of one of London's most exclusive independent congregations. A victim of chronic illness, he spent the last 40 years of life in productive semiretirement, writing a host of hymns, essays on educational policy, devotional works for children and textbooks on logic and pedagogy that became standard in the colonies as well as in many English academies. Often asked to screen teaching candidates for academies in England and the colonies and to design courses and write textbooks, he engaged in continual and active friendships and correspondence with colonial educators, including COTTON MATHER. He contributed to the libraries of Harvard and Yale and helped found and fill the Hollis professorship of mathematics at Harvard. He was active in raising funds for educational and missionary programs among the Indians.

All of his writings—even his hymns—were innovative for the times and had particular appeal to colonial parents and educators bent on educating children to build a new society in a new world. His hymns and works for children presented a benevolent deity, and his texts emphasized a gentle approach to pedagogy. His *Logick* (1725) and *The Improvement of the*

Mind (1741, 1751) were standard texts, with the former explaining the meaning of reason and its use in acquiring knowledge. The latter, which was first published as part of *Logick* and later published posthumously as a separate work, gives the principles of communicating knowledge to others, explaining the differences between teaching and preaching, along with various styles of instruction and principles for writing books. It was the most popular tract on the subject in 18th-century America.

A third work, *A Discourse upon the Education of Children and Youth* (also published posthumously, in 1753), became the standard guide to pedagogy for parents and educators in 18th- and early 19th-century America. Espousing a universal approach to education, he suggested a curriculum for all children that would include training in six broad areas: religion; understanding, memory, judgment, reasoning and conscience; reading, spelling, and writing; conduct of human life and the art of self-government; appropriate trades, businesses or professions and the ornamental arts, including history, poetry, painting and similar subjects, to add pleasure to their lives.

Wayland, Francis (1796–1865) American educator and theologian who was one of the leaders in the reform of higher education during the first half of the 19th century. Born in New York City, he graduated from Union College, Schenectady, New York, and went on to earn his medical degree, but he never practiced. Having experienced a religious conversion, he went instead to Andover (Massachusetts) Theological Seminary and became pastor of the First Baptist Church of Boston. In 1826, he returned to Union College as a professor of mathematics and natural philosophy, and, a year later, became president of Brown University, a post he held for the next 25 years.

Wayland took over Brown at a time when student rioting had forced his predecessor to

resign, and his first presidential moves hardly reflected the liberating philosophy he would later espouse for higher education. Indeed, he immediately obtained power to dismiss any students who violated school rules and ordered all members of the faculty to live on campus to oversee student living quarters. The residence requirement led to the closing of the medical school, whose faculty refused to relinquish their lucrative off-campus practices.

Although he did expand the curriculum somewhat, Wayland instituted a set of conservative academic reforms at Brown that related primarily to increased academic and behavioral discipline, he increased the number of required daily student recitations and banned textbooks, to force faculty to teach and make students learn and display their knowledge in discussions. "It is the action of mind upon mind, exciting, awakening, showing by example the power of reasoning and the scope of generalization, and rendering it impossible that the pupil should not think; this is the noble and the ennobling duty of the instructor." Wayland also expanded the library and developed a system of cumulative grades to inform parents of their sons' educational achievement. He personally taught moral philosophy to seniors, visited students and established a ubiquitous presence on campus.

With order restored, he gradually developed a new theory of the role of learning in an American university, dictated by the needs of an emerging industrial society rather than by classical tradition tied to theology. He gradually converted the science curriculum from one based on theory to one of "adopting the course of instruction . . . to the wants of the whole community. The abstract principles of a science, if learned merely as disconnected truths, are soon forgotten," he said. "If combined with application to matters of actual existence, they will be remembered." In addition, he recognized the need for broadening the reach of

education. If education, he wrote, "is good for one class of the community, it is good for all classes. Not that the same studies are to be pursued by all, but that each one should have the opportunity of pursuing such studies as will be of the greatest advantage to him in the course of life which he has chosen."

Combining his ideas on the connections between theory and practice and the universal need for education, he developed a program for higher education in his highly influential tract, *Thoughts on the Present Collegiate System of the United States*, which was published in 1842. Wayland expanded that document in an 1850 report on "proposed alterations in the course of study" to the Brown trustees and in a subsequent address at Union College in 1854 called "The Education Demanded by the People of the United States." Together, the three essays helped convert American higher education into a unique curriculum that differed substantially from the traditional English system in that it catered to a new class of individuals with special educational needs. "It is manifest to the most casual observer," he wrote in his report to the Brown trustees, "that the movement of civilization is precisely in the line of the useful arts. Steam, machines and commerce, have built up a class of society which formerly was only of secondary importance. The inducements to enter the learned professions have become far less, and those to enter upon the active professions, vastly greater."

Wayland called on institutions of higher education to broaden their curricula to meet the needs of all classes of society, to open their doors to all classes of society and to give students free choice among the programs, courses and educational offerings at those colleges. Moreover, he urged colleges to reach out to the community at large, opening their doors to adults as well as students of traditional college age. Each college, he said in his oration at Union College, should become "the grand center of

intelligence to all classes and conditions of men, diffusing among all the light of every kind of knowledge and approving itself to the best feelings of every class of the community." During the quarter-century before the Civil War, in an era in which demands for reform of education were triggering campus riots, Wayland's program became the best known and most influential program of reforms. It eventually formed the basis for creating the public land-grant colleges in the last half of the century.

Web; Web site See INTERNET.

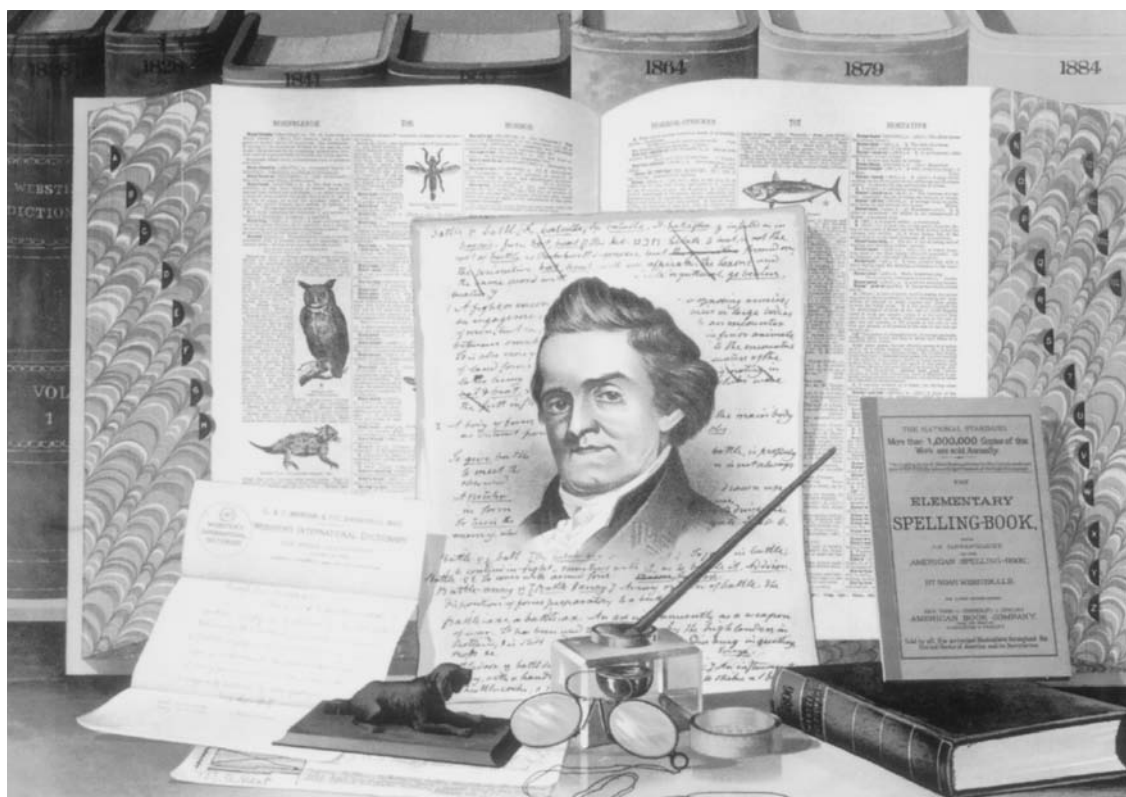
Webster, Noah (1758–1843) American patriot, educator, author, lexicographer, lawyer and journalist who, more than any other single American, forever shaped the course of American education after the founding of the Republic. Often referred to as "Schoolmaster of America" and "our greatest schoolmaster," he not only produced his famous dictionary, which Americanized the spellings of the English language, he also fathered an American philosophy of education that was as different from the traditional English approach as the new language would be. Where the monarchy had used education to implant in the minds of students an acceptance of one's class, American republican education would teach men independence and motivate them to choose to act, of their own free will, in the public rather than the private interest. "Unshackle your minds and act like independent beings," Webster called out to his countrymen. "You have been children long enough, subject to the control and subservient interest of a haughty parent. You have now an interest of your own to augment and defend: you have an empire to raise and support by your exertions and a national character to establish and extend by your wisdom and virtues. To effect these great objects, it is necessary to frame a plan of policy and build it on a broad system of education."

Unlike English education that served an elite, Webster's vision of American education was one of universality and utility. He believed that the new natural sciences of botany, chemistry and geology would enhance the development of agriculture, trade and industry, and that the social sciences of history, economics and political science would ensure the beneficial conduct of domestic and foreign affairs.

Born in comfort in West Hartford, Connecticut, he attended Yale University, left to serve in the Connecticut militia in the Revolutionary War and returned to graduate in 1778. He taught school part-time while obtaining a law degree; although admitted to the bar in 1781, he decided to teach full-time. His dissat-

isfaction with the curriculum and the texts used to teach it, provoked his plan to develop a radically new American "system of instruction," complete with new texts that would meet the needs of the new nation and educate "all ranks of society." The result was a threepart work, published between 1783 and 1785: *A Grammatical Institute, of the English Language, Comprising, an Easy, Concise, and Systematic Method of Education, Designed for the Use of English Schools in America*.

Fortunately, the three texts were far easier and more concise than their title. The first part was a speller, which in the classical tradition consisted of the alphabet, followed, respectively, by a syllabarium, lists of words of



Noah Webster and the books he wrote that created the "American" language (Library of Congress)

increasing syllabic length, and readings made up of definitions, maxims, geographical information and a brief chronology of "remarkable events in America" from 1492 to 1783. What made the speller unique was its emphasis on a single—New England—pronunciation "to destroy . . . differences of dialect . . ." Its openly stated goal was to promote cultural independence for the new nation. "It is the business of Americans to . . . diffuse a uniformity and purity of language—to add superior dignity to this infant Empire and to human nature." The second part of the *Grammatical Institute* was a traditional grammar, but the third part—a reader—was made up entirely of writings by Americans such as THOMAS PAINE, TIMOTHY DWIGHT and others. "In the choice of pieces," Webster wrote, "I have not been inattentive to the political interests of America. Several of those masterly addresses of Congress, written at the commencement of the late revolution, contain such noble, just and independent sentiments of liberty and patriotism, that I cannot help wishing to transfuse them into the breasts of the rising generation." Thus began the first system of truly American education, linking political independence with cultural independence. Webster's system touched virtually every child in every school in the United States. His "American" speller became standard, as did its American spellings. By 1850, annual sales of his spellers reached 1 million, and by 1890 more than 60 million had been sold.

It was soon after the initial publication of his speller that Webster thought of "compiling a dictionary, which should complete a system for the instruction of the citizens of this country in the language." However, not until 1806 did he publish *A Compendious Dictionary of the English Language*, in which he Americanized English spellings and replaced nonphonetic English spellings with phonetic American spellings, dropping the "k" in words like "musick" and the "u" in words like "honour" and revers-

ing the "re" in words like "centre." The *Dictionary* attempted to impose a uniformity of pronunciation, and its spellings were quickly incorporated into the speller he had written earlier.

Fired by the success of his earlier *Grammatical Institute*, Webster became a fierce advocate of universal public education and the need to make that education uniquely American. In 1785, Webster published a 48-page pamphlet called *Sketches of American Policy*, which called for "education or a general diffusion of knowledge among all classes of men" to develop a uniquely American character befitting an independent nation. "An American ought not to ask what is the custom of London and Paris; but what is proper for us in our circumstances and what is becoming our dignity." Two years later, as the states were debating the CONSTITUTION OF THE UNITED STATES, he published a series of articles declaring that "it is an object of vast magnitude that systems of education should be adopted and pursued which may not only diffuse a knowledge of the sciences but may implant in the minds of the American youth the principles of virtue and liberty and inspire them with just and liberal ideas of government and with an inviolable attachment of their own country."

A believer in utilitarian education, Webster designed a multipart curriculum to teach children to speak, read and write American English correctly and uniformly. The basic universal curriculum included arithmetic, American history, American geography and American political science. Following completion of this core curriculum, students were to study what they needed to prepare them for their ultimate work: agriculture for future farmers; modern languages, mathematics, and the principles of trade and commerce for those destined for the business world; the classics for those bound for the learned professions. Women, he suggested, should learn poetry and literature. Webster

attacked the study in elementary schools of Latin and Greek and the use of the Bible as a school textbook as impractical for a people building a new nation. He called for establishment of statewide public school systems where each community's best-educated men would instruct "young gentlemen" at least four months a year. "Here children should be taught the usual branches of learning, submission to superiors and to laws, the moral or social duties, the history and transactions of their own country, the principles of liberty and government. Here the rough manners of the wilderness should be softened and the principles of virtue and good behavior inculcated."

Beyond formal schooling, he called on parents and periodicals to complete their sons' education. "To educate a child well is one of the most important duties of parents and guardians," he declared. Webster flooded the American press with essays and articles and traveled widely, lecturing Americans on the need for a distinctly American education and culture. To enhance that outcome, he wrote an enormous number of textbooks, which, like his *Grammatical Institute*, became standard in most American schools throughout most of the 19th century. These texts included *Elements of Useful Knowledge* (1801–12), with volumes on history, geography and zoology; *Biography for the Use of Schools* (1830); *A History of the United States* (1832); *The Teacher* (a manual for using the spelling book, 1839) and *A Manual of Useful Studies* (a one-volume home encyclopedia, 1839). To disseminate his views on education, he founded the *American Magazine* in New York City in 1787, but its failure forced him to return to Hartford to practice law. He returned to New York in 1793 to found and edit two strongly Federalist newspapers, selling them 10 years later, after the success of his speller allowed him to retire.

He moved to New Haven, Connecticut, where he completed work on his *Dictionary*,

which contained 5,000 more words than Dr. Johnson's and other dictionaries of the day, and included nonliterary words as well as Americanisms. He wrote in his preface that the work was preparatory to an even greater dictionary that would be forthcoming, and after more than 20 years of continued labor, he issued the *American Dictionary of the English Language*. Published in 1828, it contained 70,000 excellent definitions in two volumes, and once again called for uniformity of language as a cement of national unity. Its spellings and definitions became the foundation of American English, while many of its spellings displaced English spellings even in England.

Ironically, although Webster successfully coaxed state legislatures into passing copyright laws to protect the revenues from his *Grammatical Institute* and other textbooks, after his death, his name passed into the public domain. Although his estate sold the rights to his dictionary to Charles and George Merriam—and their Merriam-Webster publishing company continues to produce *Webster's Dictionary*—his name appears on many other dictionaries and reference works that have no lineal connection to Webster or his books. Equally ironic has been introduction of multilingual education into American public schools, two centuries after Webster first enunciated his concept of uniformity of language as the cement of national unity and the basis of public education.

Unlike Benjamin Franklin, Thomas Jefferson and other proponents of universal public education of his era, Webster had little association with higher education until he experienced a religious conversion and in 1820 was instrumental in the founding of AMHERST COLLEGE as a theological school to train ministers in orthodox Congregationalism.

Wechsler Intelligence Scales A battery of individually administered intelligence tests developed by Dr. David Wechsler for his adult

patients at Bellevue Hospital in New York City in 1939 and was long known as the Wechsler-Bellevue Intelligence Scale. The first such test was developed specifically for adults and was a forerunner of a battery of individual intelligence tests developed for both adults and children. Among them are the following:

- Wechsler Adult Intelligence Scale, for people 16 or older. The test yields three scores, a verbal I.Q., a performance I.Q. and a full-scale E.Q. The verbal section of the test measures nonabstract thinking skills—breadth of knowledge, comprehension, arithmetic skills and vocabulary. The performance scale measures abstract and spatial skills with digit-symbol questions, picture completion, block design, picture arrangement and block assembly.
- Wechsler Intelligence Scale for Children, for children six to 16. Revised in 1974, the test is the most commonly used I.Q. test for this age group. It has 12 subtests grouped into verbal and performance sections that produce verbal, performance and full-scale I.Q. measurements. The verbal section consists of general information, general comprehension, arithmetic, similarities and vocabulary. The performance section consists of picture completion, picture arrangement, block design, object assembly and coding or maze exercises.
- Wechsler Preschool and Primary Scale of Intelligence, for children three years old to seven years, three months. The test is derived from the Wechsler Intelligence Scale for Children, with 10 subtests and one optional subtest grouped in verbal and performance sections, with categories of questions virtually identical to those of other Wechsler scales. The level of complexity, however, is lower, and it can be administered in two sessions to accommodate the shorter attention spans of younger children.

weighted classroom unit An archaic method of measuring per pupil costs and financial needs in elementary schools. Also known as a weighted elementary pupil unit the weighted classroom unit was calculated on a

base of 1.0, with adjustments made according to transportation costs, students per classroom and differences in living costs in each district. The method has been replaced by the full-time equivalent method of calculating costs.

Welch, William Henry (1850–1934)

American physician and educator who devised the model for modern medical school education. One of the most important and influential figures in American medicine, Welch was born in Connecticut, the son and grandson of doctors. He did his undergraduate work at Yale University and earned his M.D. at the College of Physicians and Surgeons (now part of Columbia University), in New York. After studying in Germany under several leading scientists, he returned to New York in 1879 to become professor of pathology and anatomy at Bellevue Hospital Medical College, where he founded the first pathology laboratory in the United States.

In 1884, he was appointed professor of pathology at Johns Hopkins University, a relatively new institution that was pioneering new approaches to higher education. At the time, medical education consisted of a combination of apprenticeships, textbook study and one to three years of formal lectures at one of the myriad proprietary medical schools organized by local practitioners. Welch developed a new, formal, four-year medical-school curriculum—the first in the United States. It consisted of two years of laboratory study of preclinical subjects, such as anatomy, physiology, pharmacology and pathology, followed by two years of in-hospital study of the clinical subjects of medicine, surgery and obstetrics.

Welch helped found both the Johns Hopkins Hospital in 1889 and its medical school in 1893, of which he was the first dean. He linked the school inextricably to the hospital by recruiting such distinguished physician-researchers as Sir William Osler (1849–1919) and the renowned

surgeon William S. Halsted (1852–1922) to staff both institutions—as professors in the medical school and as heads of their departments in the hospital. The appointments made them responsible for delivery of medical services as well as medical instruction, and the arrangement created the first so-called teaching hospital in the United States.

While making the hospital's physician-teachers central to the life of the medical schools, Welch also made the medical school's laboratory and library facilities equally central to the research needs of the hospital and its physicians. Their combined duties forced physician-professors to integrate advanced medical education with practical hospital routine, as they led their students on daily rounds of hospital wards, applying textbook and laboratory knowledge. The teaching standards and methods—and the four-year medical degree—made Johns Hopkins a model for teaching hospitals that sprang up in cities across the United States.

In 1896, Welch founded the *Journal of Experimental Medicine*, the first journal to publish the results of major medical experiments. Still at Johns Hopkins in 1901, he helped found the Rockefeller Institute for Medical Research (now, ROCKEFELLER UNIVERSITY), in New York, and served as chairman of its board of scientific directors. In 1926, he became the director of the Johns Hopkins School of Hygiene and Public Health, the first school of its kind in the world. He also became the university's first professor of the history of medicine in that year. The author of many medical papers on pathology and bacterial infections, he served at one time or another as president of almost all the leading medical and scientific organizations in the United States, including the Association of American Physicians (1901), the American Medical Association (1910) and the National Academy of Sciences (1913–16). During World War I, he served with the surgeon gen-

eral of the United States, earning the rank of brigadier general.

West Point The popular name for the United States Military Academy, which is located on a rocky outcropping known as West Point on the west bank of the Hudson River, approximately 60 miles north of New York City.

West Virginia The 35th state to enter the Union, in 1863, after its secession from Virginia, which had joined the Confederacy at the beginning of the Civil War. Although peopled by a large Confederate minority, West Virginia was so overwhelmed by Union military victories in the summer of 1861 that separatist leaders organized what they called a restored Virginia government in Wheeling to make peace with the North. Two years later, they petitioned for statehood.

From the time its first white settlers arrived in the mountainous wilderness in the 1750s, western Virginia remained physically, culturally and economically apart from the genteel plantations of eastern Virginia. What education existed prior to statehood was largely provided by churchmen. With statehood came the establishment of public schools, but the isolation of so many mountain families left most children unaffected by formal education until well into the 20th century.

The state has more than 820 public elementary and secondary schools, with a total enrollment of about 280,000 students, of whom fewer than 5% are minority students but more than 20% live in poverty. For years, many West Virginians believed that formal education served little purpose in a mountainous terrain where most adults either worked in coal mines or as woodsmen. By 1990, one-third of the state's population had not completed high school. In the mid-1990s, however, the chronically depressed state began reforming its education system in an effort to make

the area more attractive to new industry. By 2002, instructional dollars spent per pupil by the state government had risen to \$7,844—just a bit above the national average but among the top one-third of the states in terms of such spending. The increased spending had little effect on the academic proficiency of West Virginia students, however. Fourth grade scores in reading and math were still among the bottom 15 states in the nation, and eighth grade scores among the bottom eight states. At the higher education level, West Virginia's impenetrable geography had long forced the university to duplicate academic and technical programs in satellite campuses throughout the state. In 1998, however, West Virginia University became the second institution in the nation to permit (indeed, require) graduate students to submit their theses and dissertations electronically. The university also joined colleges and universities in 16 other states to form the Southern Regional Education Board's Electronic Campus, offering about 2000 DISTANCE-LEARNING courses in 75 degree programs. Together with West Virginia University, the state has 12 public four-year colleges and universities and 10 private four-year schools. It has six public and 12 private two-year colleges.

In an effort to avoid duplication and to systematize higher education, the state divided its colleges into two systems in 1989: the West Virginia University System for research universities and the West Virginia State College System for the other institutions. The reorganization has improved teacher education and cooperative-education links between colleges and high schools, and helped introduce and expand Advanced Placement course offerings at many high schools. Nonetheless, graduation rates at four-year colleges are a dismal 39.9%.

Wheelock, Eleazar (1711–1779) American religious leader and educator who founded the town of Hanover, New Hampshire, and

Dartmouth College. Born in Connecticut, Wheelock graduated from Yale College and became the Congregationalist pastor in Lebanon, Connecticut where he augmented his income by taking in boarders to tutor in preparation for college. One was Samson Occom, a Mohegan Indian who was later ordained and inspired Wheelock to educate and convert other Indians and thus promote peace between the two races.

Determined to found a free school to educate whites and Indians together, he obtained the use of Colonel Joshua Moor's house in Mansfield, Connecticut in 1754 and founded Moor's Charity School with funds raised by Occom during a trip to England. Although it had a large attendance, the school failed four years later, and Wheelock accepted an offer of a township of land from the governor of New Hampshire. In 1770 he moved northward with 30 students and other settlers to found the town of Hanover and Dartmouth College, for which he had obtained a charter from King George III the previous year. He spent the remainder of his life teaching, supervising construction of new buildings and raising funds. His son, John Wheelock, graduated from Dartmouth's first class, in 1771, and after his father's death in 1779 became Dartmouth's second president.

Wheelock, John (1754–1817) American educator who succeeded his father, the founder and first president of Dartmouth College, to the presidency of that institution in 1779. Born in Lebanon, Connecticut, where his father had opened his first school and had taught and converted Indians to Christianity, the young Wheelock was educated by his father and, after attending Yale, transferred to Hanover to become a member of the first graduating class at Dartmouth, in 1771. He became a tutor at Dartmouth, then served in the New Hampshire Assembly and joined the Continental Army in 1777, rising to the rank of lieutenant colonel.

During the first 25 years of his presidency he achieved noteworthy success by expanding the institution's physical plant and curriculum, by raising considerable funds, by reviving his father's program of educating Indians and by lecturing and conducting prayer services. In 1798, he founded the medical school. Unfortunately, his virtually lifelong relationship with Dartmouth began to unravel bitterly in 1815, when his largely Federalist board of trustees dismissed him in a power struggle over pedagogical and administrative policies.

He appealed to the Democratic state legislature, and in 1816 a Democratic legislature declared the charter issued by George III invalid and replaced it with a new one, naming a new board and reinstating Wheelock. The old board sued and, after it lost its case in a state court, obtained the services of Daniel Webster and appealed to the U.S. Supreme Court. In 1819, the Court ruled that Dartmouth was a "private eleemosynary corporation" and that its charter issued by the English Crown was a valid contract. It ruled the New Hampshire law reinstating Wheelock a violation of Article 1, Section 10 of the Constitution, forbidding any state legislation that impairs a contractual obligation. The decision restored the original board to power, but by then Wheelock had died.

whiteboard See INTERACTIVE WHITEBOARD.

white citizens' councils Ad hoc groups of townspeople formed throughout the South in the 1950s to resist racial desegregation of schools and what they called the "mongrelization" of the Caucasian race. The first white citizens' council was formed in Indianola, Mississippi, in the summer of 1954, less than two months after the United States Supreme Court had declared racial segregation of public schools unconstitutional, in its landmark decision, *BROWN V. BOARD OF EDUCATION OF TOPEKA*.

The formation of the Indianola council set off a white citizens' council movement throughout the South to fight desegregation by whatever means possible and to purge schools of "liberal" teachers and "liberal" books. The councils also sought to purge the South of the National Association for the Advancement of Colored People, which had led the legal battle that produced the *Brown* decision. Southern governors, senators and representatives flocked to support the citizens' councils, which they called a democratic "grass roots" movement, despite the secrecy that cloaked the identities of many council members. Senators Harry Byrd of Virginia and James Eastland of Mississippi resurrected the doctrine of interposition, first enunciated by John C. Calhoun before the Civil War as a fundamental right and obligation of the states to interpose themselves between the federal government and the people.

In addition to outright defiance of the 1954 Supreme Court decision, southern states passed laws to ensure perpetuation of segregation. They repealed compulsory education laws and passed laws denying funds to biracial schools and providing tuition grants to white students to attend segregated private schools. Other laws gave individual school districts authority to transfer and assign students to various schools arbitrarily and to support "white academies." In 1955, the white citizens' councils united to form a Federation for Constitutional Government to coordinate the battle against desegregation and the Supreme Court. They established allegedly private, white academies throughout the South, and in March 1956 organized a group of 101 southern congressmen and senators to issue a "Declaration of Constitutional Principles" that declared *Brown* invalid and inaugurated a program of "massive resistance."

The citizens' councils' resistance to desegregation, however, involved not only white parents' refusal to send their children to school with black children but also violence against,

and intimidation of, tens of thousands of black men, women and children throughout the South. The council-movement program of massive resistance reached a climax in Little Rock, Arkansas, in 1957, when Governor Orval Faubus prevented entry of black students to Central High School, claiming he was acting to maintain public order. As mobs of white supremacists milled about the school, President Dwight D. Eisenhower federalized the Arkansas National Guard and sent units of the 101st Airborne Division to Little Rock to enforce the Supreme Court's orders.

There were several subsequent gubernatorial attempts in Mississippi and Alabama in the early 1960s to "interpose" between the federal government and the people of the two states. Swift action by Washington, along with a spate of decisions by the Supreme Court, finally ended such official, state-government efforts. The white citizens' councils continued their campaigns of violence and intimidation until 1964, when passage of the Civil Rights Act gave the Federal Bureau of Investigation the power to investigate and arrest "citizens" for violating the civil rights of African Americans.

whole language A pedagogical approach to the teaching of reading and writing by extensive use of themes from children's literature and children's own experiences and stories. A thematic program based on authentic children's literature, whole language extracts themes from across the curriculum and asks students to explore and articulate them through a variety of media, including acting out, discussion, recitation and other forms of direct participation. Integrated into the maelstrom of activity are a form of reading and writing instruction, with students asked to recite and/or write a similar story (or a personal reaction) to the one they've just heard.

The theory behind whole language is that learning is facilitated by the interactive use of

all language cueing systems in unison—namely phonology, orthography, morphology, syntax, semantics and pragmatics. The basis of actual learning is the immediate and fulfilling use of meaningful language rather than the series of meaningless, guttural sounds used in phonics instruction. The learner leaves the whole language class able to articulate whole, useful words and sentences that can be put to immediate use in life outside the classroom.

In kindergarten, children's writing is largely personal and phonetic, but students nevertheless experience the excitement of translating words into writing and vice versa. Training in penmanship, spelling and the rules of grammar is postponed in favor of reinforcing the pleasure of listening to and telling stories. Students do, nevertheless, gradually learn to read and write correctly through an evolutionary process based on imitation, as the teacher writes words from the story material just narrated in large, bold, carefully shaped letters on the chalkboard, repeating each word aloud and asking students to join in by repeating the words and sentences in unison and then trying to write what they see and have just said.

Although somewhat complex to organize, the whole language approach to learning makes the story central to skill learning rather than the reverse. Instead of endless, repetitive writing exercises, whole language capitalizes on children's instinctive fascination with and ability to invent stories long before they can read or write. It thus uses a pleasurable activity on which to build skills. By watching the teacher write the story and eventually reading and writing it themselves, students learn the "whole language"—the stories and related communication skills—while engaging in an activity they enjoy.

Essentially an ultimate form of the TOP-DOWN MODEL OF READING instruction, the whole language approach has many obvious advantages and an army of proponents

among educators. Like most approaches to reading instruction, it also has its critics, who point out that it often fails to compensate for individual developmental differences of children four, five, six and seven years old. Not only do children learn at different rates, they also learn in different ways. Each has different interests, a different background and a different style of learning, and any classroom with only one kind of reading program can fail some of its students. Despite exaggerated claims for virtually every type of reading program—phonics, whole word, whole language, etc.—no reading program has yet proved perfect for all.

Widmar v. Vincent A U.S. Supreme Court ruling in 1981 affirming the constitutional right of student organizations at public colleges and universities to hold religious services on campus property. The University of Missouri's Kansas City campus had barred such student groups from university buildings, saying such activity violated the constitutional doctrine of separation of church and state. The university, meanwhile, permitted indiscriminate use of its buildings by nonreligious student groups. The Court held that in barring religious groups, the university had violated the First Amendment rights of students by depriving them of their right to free association and by excluding religious speech from the otherwise free speech permitted in its buildings. The Court held that the doctrine of separation of church and state would have had application only if the university itself had been responsible for the religious speech addressed to the students.

Wieman v. Updegraff A 1952 U.S. Supreme Court decision that declared unconstitutional an Oklahoma law requiring state employees to take a loyalty oath as a condition of employment. The case involved the dismissal in 1951 by Oklahoma Agricultural and Mechanical

College of seven teachers who had refused to swear that they had not been members of the Communist Party within the previous five years or members of any group deemed by the U.S. government to be a "Red Front" or subversive organization. Calling test oaths "notorious tools of tyranny," the Court ruled that the Oklahoma law violated the individual's constitutional right of free association and denied jobs to people "solely on the basis of organizational membership . . . regardless of their knowledge of the organizations to which they had belonged. But membership may be innocent," said the Court. "Indiscriminate classification of innocent with knowing activity must fall as an assertion of arbitrary power. The oath offends due process. . . ."

Wiley, Calvin H. (1819–1887) American educator who defied violent antieducation sentiment in his native North Carolina to establish universal public education in the state and to keep most schools running during the Civil War. A graduate of the University of North Carolina in 1840, he was admitted to the bar the following year and, after eight years of practicing law, was elected to the state legislature. When the law establishing the office of state superintendent of common schools was passed, Wiley was elected to that post in 1853. He held the office until April 26, 1865, when, after the surrender of the Confederacy, a Union Army directive declared all state offices vacant. But during his 12 years in office, he had laid the foundation for the future of public education in the state. He had organized the state education association, had helped establish teacher training schools, had established standards and examining boards for teachers, had instituted required annual certification of teachers, had organized county school units, with school superintendents and school boards, and had promoted universal education as a means for assuring the state's economic recovery.

Willard, Emma Hart (1787–1870) America's first woman educator and founder of the first school for women that offered a curriculum equivalent to that of men's academies and colleges. Born Emma Hart, she was one of 17 children of the wealthy landed family for whom Connecticut's capital city of Hartford had been named. Her father and mother were among the most cultured and influential people in Hartford; unlike most parents of that era, they routinely spent evenings in deep, animated philosophical discussions with their children. As a youngster, Emma attended common schools, but at 13 learned philosophy, literature, geometry and arithmetic on her own. At 15, she enrolled in the then-famed Berlin (Connecticut) Academy for girls and did so well that the town appointed her to head the district public school.

Throwing away whips and rulers, she maintained order and stimulated learning by developing imaginative new teaching methods that are now part of the foundation of modern teaching. Hart abandoned rote learning in favor of Socratic questions and answers that taught her students to reason logically. The results astounded parents and students alike, and word of her methods traveled across New England. She was named to teach at the Berlin Academy in 1806, where she had been a student two years earlier—all the while continuing her own studies and adding to her vast knowledge. Prestigious girls' academies in New York, Massachusetts and Vermont invited her to teach. Not yet 21, she moved to Middlebury, Vermont, to teach at the girls' academy there.

In 1809, she met and married her husband, the prominent, wealthy physician John Willard, who helped his wife study all his scientific and medical books, along with philosophical works on individual liberty and equal rights. In 1814, she decided to enroll in nearby Middlebury College, which, like all the world's colleges then, was open only to men. She met

with a swift, immediate and humiliating rejection. She converted her anger and bitterness, however, into a design for a woman's boarding school that would make "an important change in education by the introduction of a grade of schools for women higher than any heretofore known." She had already taught herself most college courses, and disguising her school with the title Middlebury Female Seminary, she proceeded to introduce a curriculum that was virtually identical to that of Middlebury's, with a full range of classical and scientific studies. Prior to this, female seminaries had taught only "domestic and ornamental arts" to train women as housekeepers, wives and mothers.

The school's fame spread quickly and, within two years and with her husband's help, drew 70 students and required expansion. Knowing the Vermont legislature would reject



Emma Willard (*Emma Willard School*)

any request for state support, she wrote instead to New York State's Governor De Witt Clinton, a strong advocate of universal public education and the education of women. Although a supporter of the then-growing women's rights movement, Willard decided on diplomacy in her appeal to the all-male New York State legislature, saying that it was in their best interests and that of all men to see that their sons were not taught by ignorant, uneducated women. "Our sex need but be considered in the single relation of mothers," she said. "In this character, we have the charge of the whole mass of individuals who are to compose the succeeding generation. . . . How important a power is given by this charge."

Although backed by Governor Clinton and a vast following of parents, Willard was unable to obtain official funding from the state legislature. At her own expense, she published a pamphlet called *An Address to the Public: Particularly to the Members of the Legislature of New York Proposing a Plan for the Improvement of Female Education*. Educators across the United States and Europe hailed the proposal as one of the most important documents on education of its time. It won praise from President James Monroe and former presidents Thomas Jefferson and John Adams, as it did from Governor Clinton. But hordes of conservatives charged that Willard was a radical who would upset the social order and destroy the American family by making women so ambitious that they would leave their families.

Furious "almost to frenzy," she continued touring the United States, speaking to groups of parents. The people of Troy appropriated money to buy a three-story building to found a new school, and they agreed to raise enough money to renovate it and endow it. Convinced the area would become an important commercial and cultural center after the opening of the Erie Canal, Willard founded her Troy Female Seminary in 1821, four years before the opening of

the canal and five years before the opening of the first public high schools for girls in the United States. It was the first school in the world to teach women science, philosophy, history and other subjects hitherto reserved for men. Only 34 years old on opening day, the regally dressed Willard watched 90 women from seven states march through the doors of her new school. Willard's husband abandoned his medical practice to help his wife, and together they broke new ground in academics and pioneered changes in school administration that would eventually sweep the nation. She introduced student government, appointing student monitors to inspect rooms and report violations. Students shared double rooms, with each taking turns cleaning every other week.

Instead of a whip to "beat the devil" out of miscreants as at most schools, Willard spent hours talking with each child, probing to find the emotional roots of any youngster's misconduct—35 years before the birth of Freud. By 1831, 10 years after its opening, Troy Female Seminary had become world-renowned, enrolling more than 100 boarding students and 200 day students each year. Many were from some of the most prominent families in the United States and Europe. Willard educated the daughters of several governors, the nieces of the American author Washington Irving and, in what was a triumph for so gallant an advocate of women's rights, the niece of England's Mary Wollstonecraft, who in 1792 had written the world's first major work on women's rights, *A Vindication of the Rights of Women*. Published in Philadelphia in 1794, it is generally credited with having planted the seeds for the woman suffrage movement and the demand for equal educational rights for women. The book deeply influenced Willard, who believed wholeheartedly in Wollstonecraft's proclamation that only a good education stood in the way of women becoming the equals of men. Women, Willard said, were the natural equals of men, and "the

subjugation of women was not the law of nature but simply an injustice inflicted by men."

Willard's curriculum astonished administrators at men's colleges. As one student described her course of study to an astonished family friend, "We had reading, writing, spelling, arithmetic, grammar, geography, history, maps, the globe, algebra, geometry, trigonometry, astronomy, natural philosophy, chemistry, botany, physiology, mineralogy, geology, and zoology in the mornings; and dancing, drawing, painting, French, Italian, Spanish and German in the afternoon. Greek and the higher branches of mathematics were only studied by the tall [older] girls." The school's worldwide reputation earned it a visit from France's General Lafayette in 1824, during his triumphal return to the country he had helped free during the American Revolution. A few years later, when Willard visited France as a representative of the American government to an educational conference, Lafayette escorted her to court balls, to the French parliament and to the most famous French schools for girls. Willard became as well known in Europe as in the United States and helped pioneer women's education there as well, by raising thousands of dollars to found a teachers' training school in Athens, Greece.

Willard also pioneered new teaching methods that made it easier for young minds to understand complex facts. To that end, she wrote a number of widely used textbooks, including a groundbreaking geography textbook that included maps, which, for the first time, tied geography to history and showed how nations had changed shape in each era. Among her other classic texts were *History of the United States* (1828) and *Astronomy* (1853). She also wrote a book of poems, the best known of which was "Rocked in the Cradle of the Deep." Admired by her students, she inspired more than 200 to become teachers themselves. As her school grew, she made it the first to offer scholarships for intellectually

gifted women who could not otherwise have afforded to attend.

In 1824, Willard's beloved husband and helpmate died, and she was forced to run the school by herself. Gradually, her son and daughter-in-law assumed responsibilities for running the school. In 1838, alone at 51, she shocked admirers and detractors alike by turning the school over to her son and marrying Christopher Yates, an Albany ne'er-do-well who soon left her penniless. Willard returned to her childhood home near Hartford and threw herself into HENRY BARNARD's campaign to establish universal public education in Connecticut. Fortunately, she had trained her son and daughter-in-law as skilled administrators and teachers. By 1850, they had not only maintained the school's reputation as the finest women's school in the world, they had also it the academic equal of the finest men's academies.

In the meantime, Willard wrote articles, toured Connecticut, trained teachers and became superintendent of four district schools in Hartford—the first woman superintendent of schools in the United States. In 1844, Willard returned to Troy to lead the campaign for improvement of public schools in New York State. Traveling 700 miles across the state by stagecoach and barge, she managed to train more than 500 teachers as she went and helped hundreds of towns establish public schools. In 1846, she set out on a two-year, 8,000-mile trek across the West and South to carry her message of universal public education and gender equality across America.

In 1854, Willard and Barnard went to England for a world educational conference and were both honored by the British House of Lords. When she returned to the United States, she settled in a small house near her son and daughter-in-law on the campus in Troy. She spent the rest of her life there, editing and updating her books, writing new ones and sharing her wisdom with educators and students. In

1870, after decades of continual, rude rejections of her pleas for educational funds for women's education, the all-male New York State Legislature finally expressed appreciation for what she had done for her country by passing a solemn resolution of praise for her work in education. Unfortunately, she was dead, but the school's name was changed to the Emma Willard School. Still a school for girls, it prepares students from ninth through twelfth grades for the most prestigious colleges and universities in the United States.

William Penn Charter School The first school founded by the Society of Friends, or Quakers, in the United States. Established in Philadelphia in 1689, the school was a response to the call of William Penn to his fellow Quakers to found schools wherever they settled. "There is scarcely any one thing," Penn wrote in 1679, "that so much needs the wisdom of the nation in the contrivance of a new law as the education of our youth . . ." Because they refused to pay tithes and to recognize the priesthood and sacraments of the Church of England, Quakers had been perceived as unpatriotic and atheistic. The result was a wave of persecution that sent them fleeing to the American colonies in the 1660s, settling first in New Jersey. After William Penn was granted the Pennsylvania colony, some 7,000 Friends migrated into the Philadelphia area to escape persecution in other states.

Starting with the Friends' Public School in 1689 (now the William Penn Charter School), the society established more than 40 schools in the next 70 years, giving Pennsylvania the largest school system of any American colony. Penn Charter remains one of the nation's most prestigious primary-secondary schools, with a total enrollment of nearly 900 students attending kindergarten through high school. Although still affiliated with the Society of Friends, it offers a completely secular curriculum of arts and sciences and a college preparatory program

that feeds its graduates into the nation's finest colleges and universities.

Wing Standardized Test of Musical Intelligence A battery of tests to measure acuity of musical hearing and sensitivity to musical performance. Designed in 1939 as a test for children eight years old and older, it is seldom administered to less than gifted children and is intended largely to help determine whether they should embark on a specialized musical education. It measures the ear's ability to discriminate rather than any factual knowledge about music. The seven subtests measure acuity with questions on chord analysis, pitch change, memory, rhythmic sensitivity, harmony, intensity and phrasing. The test is one of several measurements of musical aptitude, the very first of which was developed by Carl E. Seashore, who pioneered musical aptitude testing in 1919. The Seashore Measures of Musical Talents tests student discrimination of pitch, rhythm, time, timbre, loudness and tonal memory. Other musical aptitude tests include the Gaston Test of Musicality and the Gordon Musical Profile.

Winnetka Plan One of the many innovative educational experiments that American teachers and school administrators were attempting in the wake of JOHN DEWEY's seminal work in the UNIVERSITY OF CHICAGO LABORATORY SCHOOL. Dewey's work inspired a whole generation of imaginative teachers to break the mold of traditional pedagogy and attempt other, newer methods of teaching children. Introduced in 1919 in the Chicago suburb of that name, the Winnetka Plan was the creation of superintendent CARLETON WOLSEY WASHBURN, who sought to individualize elementary school instruction by dividing the curriculum into two parts. One part concentrated on instruction in basic skills that all students would have to master, i.e., reading, writing,

language usage and spelling. Such subjects would be taught on a largely individualized basis that would permit each student to progress at his or her own developmental rate and finish the program whenever he or she could. Each student had to record his or her rate of progress on worksheets that would permit classwide comparisons.

The second part of the curriculum was made up of cultural and creative experiences taught in group settings, where no grading took place but each child was expected to absorb as much as he or she enjoyed, and then participate in group discussions from which children were to learn from one another.

Winthrop, John (1714–1779) American-born heir to one of the most preeminent colonial families, and the most distinguished teacher, scholar and scientist of the colonial or provincial era. Born in Boston, he was a descendant of John Winthrop (1588–1649), the first governor of the Massachusetts Bay Colony. He graduated from Harvard in 1732, but devoted the next six years to private study in his father's house, emerging in 1738 prepared to accept the distinguished Hollis Professorship of Mathematics and Natural Philosophy at Harvard, a chair founded by ISAAC WATTS and filled earlier by Winthrop's own teacher, Isaac Greenwood. Winthrop remained at Harvard until his death, amassing the most distinguished academic career in the colonies and a reputation and body of scientific discovery that earned him world renown. His initial work was in the field of astronomy, where he was among the first scientists to study sun spots and to track the transits of Mercury and Venus. And his inquiries into the natural history of earthquakes and his mathematical calculations on the reach of a New England earthquake in 1775 are credited with having created the science of seismology.

At Harvard, Winthrop was responsible for a vast expansion in the breadth and quality of the

science and mathematics curriculum, introducing calculus and developing a series of lectures on the laws of mechanics, heat, light and electricity. His work was instrumental in transforming Harvard from a theological institution to one that focused increasingly on secular academics and sciences. In addition to expanding the curriculum, in 1751 he established the first American laboratory of experimental physics at Harvard, to house a vast array of equipment for demonstrations during instructional lectures. A deep believer in Sir Isaac Newton's principles and doctrines, he taught four decades of Harvard graduates and, through a lengthy correspondence, had considerable influence on the work and thinking of Washington, Franklin and John Adams. He was a fellow of the Royal Society and the American Philosophical Society and was awarded honorary degrees by the University of Edinburgh, Scotland, and by Harvard.

wired classroom See CLASSROOM; COMPUTERS.

Wisconsin The 30th state to join the Union, in 1848. Always a leader in American education, with education a top priority for the majority of its citizens, Wisconsin established its first public elementary school in 1845, its first public high school in 1849 and in 1856 the first kindergarten in the United States. By the end of the 19th century, the state had one of the best-developed public education systems in the United States. In 1911, Wisconsin established the nation's first statewide vocational education system, while the UNIVERSITY OF WISCONSIN established the first statewide adult educational network. The state has more than 2,200 public elementary and secondary schools, with a total enrollment of about 875,000, of whom 20% are minority students and 12% live in poverty. Student proficiency is well above average for the nation—consistently among the top 20 states. Eighth grade math scores in 2005 were eighth highest in the nation.

Reflecting the state's populist traditions, Wisconsin's public college and university system serves nearly 300,000 students both on campus and in extension and distance-learning programs at all 13 of its four-year colleges and 18 two-year colleges. A pioneer and still a national leader in adult education, the state purposely built its higher-education system with a geographic breadth that allows it to reach almost every citizen in the state—and vice versa. The state also has 35 private four-year colleges and universities, including Marquette and Lawrence universities and Beloit and Ripon colleges. There are two private two-year colleges in the state. Graduation rates at four-year institutions are 56.8%.

(See also CHARLES R. VAN HISE.)

Wisconsin v. Yoder A 1972 ruling by the U.S. Supreme Court that gave the Amish religious sect a rare exemption from state compulsory education laws. The Court held that 300 years of unswerving dedication to their simple way of life entitled the Amish to be exempt from Wisconsin's (and, by extension, from every other state's) law requiring children to attend school until they were 16. The Amish traditionally withdraw their children from school after the eighth grade. The Court said that compulsory education laws violated their constitutional rights to free exercise of religion. The Amish believe that secondary schools teach children worldly values that are in conflict with their way of life.

The decision represented the first exemption of a religious group from compulsory education, and the Court warned that the ruling did not and would not apply to any other group that opposed formal education for whatever reason. "It cannot be overemphasized that we are not dealing with a way of life and mode of education by a group claiming to have recently discovered some 'progressive' or more enlightened process for rearing children in modern life."

withdrawal A vague term, which, in education, can mean everything from a student's transfer to another school, to a leave due to illness, forced expulsion or dropping out. Withdrawal can also refer to a personality characteristic that sees a student fail to participate in classroom discussions and activities; the student may then require referral to the school health office.

Witherspoon, John (1723–1794) Scottish-born Presbyterian minister, educator, president of the College of New Jersey (now, Princeton) for 25 years and the only clergyman to sign the U.S. Declaration of Independence. Perhaps the most influential educator of his era, Witherspoon was educated at the University of Edinburgh and ordained and served in the Presbyterian ministry until 1768, when he was offered—and at first declined to accept—the presidency of the College of New Jersey. Established in 1746, the college was founded after a split in the New York Presbyterian Church between orthodox "Old Light" and more liberal, evangelical "New Light" factions. The New Light academy was moved to the home of Jonathan Dickinson, in Elizabethtown, New Jersey, then to the parsonage of Aaron Burr Sr. in Newark, and finally to Nassau Hall in Princeton, where Burr and three other evangelists turned it into a center for controversy with Old Lights in New York. A conservative, Witherspoon had little inclination to lead a New Light school that reportedly was losing enrollment and was in deep financial difficulty. After considerable coaxing from his friend BENJAMIN RUSH, he packed up 300 books to stock the college library, and he and his five children embarked for Princeton and Nassau Hall, where students celebrated his arrival by illuminating Nassau Hall with candles in each window.

Touched by the warmth of his reception, he set to work rebuilding the school. He found students inadequately prepared, enrollment from the south in steep decline and a near-

empty exchequer. He set off on trips through the colonies, preaching, recruiting students and gathering funds. An extremely erudite man, he combined strongly orthodox views with a deep belief in the "common sense" school of Scottish philosophy, holding many well-read persons to be "greatly inferior to more ignorant persons in clear, sound common sense." He promoted the college as a center of learning, and recruited students from some of the finest and wealthiest families. He encouraged the Madisons of Virginia to send him their son James, and he coaxed a gift of 50 gold guineas from his friend George Washington.

Committed to essential Calvinism, yet equally committed to the right of a congregation to appoint its own pastor independently of the mother church, Witherspoon combined the best of the old thinking from Scotland with the new thinking of a Pew nation. Building on his great popularity, he reshaped the college and, with it, many other leading American colleges. He added American education to the traditional classical education, broadening traditional classical and philosophical studies to include English- and French-language studies, history, oratory and eloquence. He opened a grammar school in the basement of Nassau Hall to provide young students with a better preparation for college. He even educated children not destined for college and, while at the college, coined the Latin word *campus* (Latin for field) to describe the bucolic setting. The word would become synonymous with the grounds of colleges and universities throughout the United States.

Externally, he redirected the effort of the college to community service; internally, he made clear to students that their work at college was to give them the education necessary to fulfill their ultimate obligation to serve the commonwealth and the church. Throughout his years at Princeton, Witherspoon played an active role in reorganizing the Presbyterian Church, emphasizing the need for an educated clergy. In

his classes, he taught both politics and religion, constantly emphasizing the relationship and essential unity of piety and public service. An inspiration to his students, he wholeheartedly supported the national cause and became a leading member of the Continental Congress. His graduates included one president of the new nation, James Madison; a vice president, Aaron Burr; 10 cabinet officers; 60 members of Congress and three Supreme Court justices. In effect Witherspoon helped to shape the thinking of the leadership of a new nation and the type of education it would offer its children.

Wolman v. Walter A complex 1977 U.S. Supreme Court decision that upheld the constitutionality of an Ohio law authorizing various forms of state aid to private schools. In rejecting such aid in previous decisions, the Court had held it unconstitutional for public schools to use taxpayer money to provide religious schools with materials or personal services that would, in effect, publicly support and further a religion. The Ohio law allowed specific forms of aid that could in no way be construed as furthering a religion. Loans of secular textbooks, for example, were included, along with such services as standardized testing and scoring, speech and hearing diagnostic services and remedial and guidance services. The Court voted against the lending of classroom instructional equipment other than textbooks, and rejected a provision that would have allowed state financing of parochial school field trips. The key element in deciding which form of state aid was considered constitutional was whether the aid could be construed as "advancing religion." Far from a landmark case, the indecisive nature of the decision left school district officials in complete confusion over what equipment and services they could or could not share with or lend to parochial schools.

(See also *AGUILAR V. FELTON*; *CHURCH-STATE CONFLICTS*; *EVERSON V. BOARD OF EDUCATION*; *MEEK V. PITTINGER*; *MITCHELL V. HELMS*.)

Women's Armed Services Act of 1948 A federal law that made women permanent participants in all branches of the U.S. Armed Services. The act opened important avenues of technical and professional education and job opportunities that had hitherto been closed to women. Although admitted to the Armed Services during World War II, women had been confined to all-female units and assigned jobs traditionally associated with women's work—nursing, clerical duties, light transportation and low-level quartermaster functions. Moreover, servicewomen were often set apart in special, often physically isolated service organizations such as the WACs, WAVEs and WAFs. The act of 1948 represented a recognition of the essentiality of the work women had contributed during the war, and it sought to integrate women into the services to a degree that would make the military more attractive as a career.

Opposition to the integration of women into the Armed Services was more long-lasting than opposition to the integration of blacks, and it was not until the 1970s that barriers began disappearing and the number of women in the military began to increase substantially. Although still barred from combat roles, they gained access to almost the full range of even the most sensitive military operations as well as to the military academies and most post-graduate military colleges.

women's education The formal instruction of women—until relatively recently, limited to the “domestic arts” and centering around skills needed for nurturing infants and maintaining the household. In early civilizations, children were educated informally, within the family unit, in preparation for the roles they would play in later life—namely, man as hunter and fighter and woman as caretaker of infants and the home. God-centered religions indoctrinated their followers in the belief that women were naturally weaker and inferior to men. In

the Christian Bible, St. Paul urged Christian wives to be obedient to their husbands. Hinduism promised virtuous women the reward of rebirth as men. Ancient Greece and Rome reserved education for men, although the Greek philosopher and teacher Plato advocated equal educational rights for women in *The Republic*, his concept of the ideal state.

The post-Babylonian Captivity Jews may have been the first to offer women equal opportunity for formal instruction, which was largely related to study of sacred texts. Some educational opportunities were extended to women of noble birth during the early Christian era and throughout the Reformation, although they tended to be limited to the domestic and ornamental arts. Martin Luther called for equal education for women, albeit in separate schools from men, and even appealed for civil support of such schools. The Roman Catholic Church echoed that appeal at the Council of Trent, from 1545 to 1563. The appeal had little practical effect, however, and education of women in the Western world changed little until the end of the 18th century and the beginning of the women's rights movement.

Even the expanded role of women necessitated by life in the American colonial wilderness did little to expand women's access to formal education. English common law was clear: “husband and wife are one, and man is the one.” Girls, like boys, were the property of their fathers, and women became the property of their husbands, with no control of their persons or their children, no right to own land or money and no access to an academic education. The domestic arts in which they received training were those required for raising children and running the household; the ornamental arts included singing, dancing and other skills needed to amuse husbands and “ornament” their households.

The accumulation of wealth in the colonies sowed the seeds of change, as families of means



Troy Female Academy, founded in 1821, was the first school in the United States to offer women the same academic education as men in the arts and sciences. (*Emma Willard School*)

began sending their daughters to private academies, where they learned to read literature other than Scripture, as well as to write and to calculate. Among the books young women read in the wake of the American Revolution was Mary Wollstonecraft's *Vindication of the Rights of Woman*. Written in England in 1792, when popular demands for greater individual liberties were provoking uprisings throughout the Western world, it inspired such academy graduates as CATHERINE BEECHER, EMMA WILLARD and MARY LYON to launch the women's educational rights movement in the United States.

Beecher and Willard opened academies that offered women college-level education, and in 1837 Lyon founded the world's first college for women in Mount Holyoke, Massachusetts. By the end of the 19th century, women had taken control of the teaching profession in elementary schools, and outstanding women's

colleges had been founded throughout the United States. Even all-male colleges, such as Harvard and Columbia, had established affiliated colleges for women. The state-by-state passage of compulsory education laws and the granting of woman suffrage after World War I provoked a vast expansion in women's education, but it remained different and inherently unequal to that afforded men. Few women's colleges offered courses in engineering, the advanced sciences, advanced economics and other studies that prepared men for careers at the highest levels of the professions, industry and government.

When Congress passed the EDUCATION AMENDMENTS OF 1972, prohibiting discrimination on the basis of sex in educational institutions receiving federal aid, colleges and universities were forced to give women equal access to higher education and provide equal

facilities in every area of college life, including intramural and intercollegiate sports. By 1994, more than half of all college students were women and, by 2005, women made up 60% of all full-time students enrolled in American four-year and two-year colleges. The percentages of women grew equally dramatically at graduate schools, where females accounted for more than 47% of all doctoral degrees conferred in 2002, compared with less than 25% three decades earlier. They earned more than 43% of the medical degrees in 2002, compared with 8.4% three decades earlier; 38.6% of the degrees in dentistry, compared with less than 1%—0.9%—in 1970; 47.3% of law degrees compared with 5.4%; and 32% of degrees in theology, compared with 2.3%.

Equal access to formerly all-male institutions, of course, produced a startling decline in the number of single-sex colleges. Only 14 such colleges remain in the United States—9 women's schools and five men's schools. Fifty-one formerly all-female colleges remain primarily women's institutions, but, to qualify for federal aid, they accepted some men, whose numbers account for as little as 0.2% of the student body but as much as 23.5% and, in the legal sense at least, establish their colleges as coeducational.

(See also GENDER DISCRIMINATION; SINGLE-SEX EDUCATION.)

women's studies Any of a variety of liberal arts courses that focus on the roles, history, productive and creative output and contributions of women. Thus a literature course in a women's studies program would concentrate solely on the prose and poetry of women. Usually limited in high schools to individual courses in the senior year, women's studies may be grouped in a separate department at some colleges and universities and offered as a major.

Woodson, Carter G. (1875–1950) American historian and educator; cited in most ref-

erence works as the "father of Negro history in the United States." Born of former slaves in Virginia, he grew up in such dire poverty that his formal schooling was postponed until he was almost 20. He graduated from high school in 1896 and from Berea College in 1903. He earned his M.A. in history at the University of Chicago and went to Massachusetts to earn his doctorate at Harvard University in 1912, all the while teaching and writing to support his studies. In 1915, he founded the Association for the Study of Negro Life and History, to collect accurate data and publish information to educate black—and white—Americans about African-American culture and history.

Woodson founded the association to promote an alternative to the types of African-American education then being espoused by BOOKER T. WASHINGTON and W. E. B. DuBOIS. Washington and DuBois had spent a decade in bitter debate over the advantages and disadvantages of industrial education and classical university education as a means for lifting African Americans out of poverty and illiteracy. Washington and his disciples called for massive programs of industrial education to give African Americans the skills to earn a living in white society. DuBois, on the other hand, called for an equally massive program of classical education to give blacks the same civil and political rights as whites.

Woodson harshly criticized both positions, saying that industrial education tended to lag behind industrial progress and too often prepared blacks for jobs that were made obsolete by new industrial equipment before the blacks even graduated from school. He was equally harsh in attacking classical education, which he said taught the "educated Negro . . . to admire the Hebrew, the Greek, and the Latin and the Teuton and to despise the African." Woodson maintained that blacks would be unable to participate in American life on an equal basis with whites until they gained a

complete knowledge and understanding of their own African-American heritage through black studies programs. Education as it existed in the United States, he said, had robbed blacks of their heritage and alienated them from their traditional values.

While still teaching at a Washington, D.C., high school, Woodson began publishing the *Journal of Negro History* to help teach blacks about their own history. In 1919, he became dean of the liberal arts college at Howard University, and a year later became dean at West Virginia State College for two years. In 1921, he organized Associated Publishers, Inc., which published works by black authors on black culture at a time when white publishers refused to publish such material. He himself concentrated on writing books on black history, of which the most notable were the widely used textbook *The Negro in Our History* (1922); *African Myths* (1928); *The Rural Negro* (1930); *The African Background Outlined* (1936) and *African Heroes and Heroines* (1939). In 1926, he created the idea of Negro History Week, which has been observed annually ever since. In 1937, he began publishing the *Negro History Bulletin* for use in schools. It eventually formed the basis for the black studies curriculum that has been widely adopted in schools and colleges across the United States.

Wood v. Strickland A 1975 U.S. Supreme Court ruling that held a school board member liable for damages for violating the constitutional rights of students. By implication, the ruling applied to school administrators, teachers, counselors and, indeed, all public employees. In effect, it stripped teachers and school administrators of the traditional, arbitrary powers they had held over schoolchildren for centuries under the doctrine of *IN LOCO PARENTIS*, whereby they acted on behalf of parents and were generally immune from retaliation for violating a child's constitutional rights. *Wood* stripped school representatives of that

immunity and held them open to civil suits for damages. In *Wood*, the Court held a school board member liable for damages "if he knew or reasonably should have known that the action he took within his sphere of official responsibility would violate the constitutional rights of the students affected, or if he took the action with the malicious intention to cause a deprivation of constitutional rights or other injury to the student."

word-attack skills An essential methodology for deciphering the meaning of new and unfamiliar words. There are three sets of basic word-attack skills: structural analysis, phonic analysis and contextual analysis. Structural analysis breaks down words into their meaningful parts—roots, prefixes and suffixes—and presumes a basic knowledge of those word elements. Phonic analysis ties various sound elements of the unfamiliar word with the same sounds of a word whose meaning is known. Contextual analysis attempts to derive a meaning for an unknown word from the meanings of the surrounding words and phrases.

word book A pedagogical tool for teaching and improving spelling and writing of first, second and third graders. Usually nothing more than an old-fashioned spiral stenographer's book with alphabetic tabs, a word book is a child's own personal spelling book, or dictionary, to which he or she may refer. When a student needs a word to be spelled in class, he or she asks the teacher, then writes the word down in the spelling book on the page with appropriate tab for future reference. The act of discussing the spelling of a word and recording it in one's personal word book tends to produce a memory construct that indelibly affixes the word and its spelling in the student's mind.

word family A pedagogical method for helping children to remember spellings of large

groups of words by linking them into artificial “families,” each based on a rhyming sound, as in “bit, fit, hit, kit, lit, pit, sit, wit,” all of which belong in the “it” family, or “bat, cat, fat,” in the “at” family.

word lists Any of a variety of compilations of words, arranged on the basis of increasing difficulty and used as an element of spelling instruction. Designed for students in elementary school, the first of the modern, comprehensive words lists was developed by American educator EDWARD LEE THORNDIKE in *A Teacher's Wordbook of 20,000 Words*, published in 1926 and later expanded to 30,000 words.

word processing The production and editing of printed documents on a computerized system that includes a keyboard, video display, magnetic storage device and software or operating system. Although many children are capable of learning word processing in preschool, formal instruction in schools is often postponed until students are in third or fourth grades because premature exposure to and dependence on, word-processing equipment can interfere with the development of good penmanship and spelling skills. Once learned, word processing allows students to produce typewritten documents, complete with illustrations and complex layouts. The word processor speeds the entire process of writing, editing and completing school papers, allowing almost instant corrections, replacement, deletion, transfer and insertion of text.

words-in-color An extension of the multi-sensory approach to the teaching of reading by adding the medium of color to the sounds of the English language. Developed in 1957 for teaching ENGLISH AS A SECOND LANGUAGE, the system uses 39 color shades to promote recognition of the 47 sounds in English. The process is somewhat akin to coloring each of the states or countries on a map a different color.

word wheel An entertaining aid for teaching children to read. Word wheels are made up of two concentric, rotating cardboard wheels, with selected consonants printed near the rim of the outer wheel, much like the numbers on a clock. A smaller wheel, superimposed on the larger, is segmented like a pie, with each segment containing one of a related group of phonograms such as “at, ap, am” or “it, im, ip.” By rotating the inner wheel the student can continually juxtapose the phonogram with a consonant that combines with it to make a word.

work, transition to The link between formal education and specific job opportunities. In an effort to strengthen the links between high school education and the world of work, most vocational education programs tie into so-called TECH-PREP OR TWO-PLUS-TWO PROGRAMS—four-year vocational programs that combine the last two years of high school vocational education with two years of vocational education at associated community colleges.

workbook A textbook supplement containing exercises tied directly to materials discussed in the related text. Effective in early elementary education, workbooks force students to review all textbook materials and demonstrate an understanding thereof in a limited space that imposes language discipline by requiring terse answers that are to the point. In addition, the workbook serves as a portfolio of a student's work over an extended period, providing a visible measure of academic progress.

worker education Any formal or informal instructional program to improve employee vocational or academic skills. Worker education is as old as the skilled crafts themselves and first took the form of APPRENTICESHIPS, with master craftsmen teaching novice workers a manual craft and, in many cases, enough reading, writing and calculating skills to pursue a

trade. In the American colonies and early years of the Republic, apprenticeship training often included religious instruction. Formal worker education in the United States began after the passage of COMPULSORY EDUCATION laws in the mid-19th century. Factories dependent on child labor established in-plant classrooms, where child workers attended school for several hours a day, either in the morning or afternoon, before or after working a morning or afternoon shift in the factory. Toward the end of the 19th century, intensified competition and the threat of unionization in American industry forced companies to search for ways to improve worker efficiency and loyalty. Some companies found an answer in the establishment of company schools that not only improved worker skills but also taught workers an array of academic subjects. In the case of General Motors, the corporation school even provided a college education leading to bachelor's degrees.

With the emergence of labor unions at the end of the 19th and beginning of the 20th centuries, workers and their organizations also began organizing educational programs and institutions. At the time, fewer than 10% of American children were afforded a secondary education, and many children who had gone to work at the age of five or six lacked even a primary education. Many of the educative programs that emerged were tied to efforts by the Socialist Party and other reform movements to end child labor, improve working conditions and win more rights for workers. In major cities, such as New York and Chicago, the Socialist Party published books and pamphlets and sponsored lectures, study circles, discussion groups and formal classes for workers. Designed primarily to denounce the evils of capitalism and promote socialism, many of the classes evolved into instruction in reading and writing because few workers were literate enough to read and understand socialist propaganda. As

early as 1906, the Rand School of Social Science in New York City was teaching courses in union organizing techniques and collective bargaining. In 1910, the International Ladies Garment Workers Union established its own educational department, while some colleges organized special programs for workers. In 1921, the Socialist Party organized a formal institution known as the Brookwood Labor College, in Katonah, New York, north of New York City. Based on the English Working-man's College in London, Brookwood remained open until 1937, offering courses in social history and philosophy, and practical instruction in the organizing of unions and strikes. It also offered courses in writing.

At a different level, Bryn Mawr College, the prestigious and private women's institution near Philadelphia, organized the Bryn Mawr Workers' Summer School in 1921 to offer working women a broader, nonlabor-oriented education in literature, history, science and hygiene—an "education for life," as it was called. With the spread of the worker education movement came the need to coordinate programs and avoid costly duplication. In 1921, the Workers' Education Bureau of America was founded to act as a clearinghouse for labor education across the United States; after America's two largest unions merged into the giant AFL-CIO in 1955, it worked to centralize such education. In 1970, it opened the George Meany Center for Labor Studies in Silver Spring, Maryland, as a training institute for potential labor leaders.

Meanwhile, the other, older forms of worker education, such as labor colleges, began disappearing, as compulsory education and child labor laws forced every child under 16 into school and obviated the need for compensatory education later on. After World War II, traditional colleges and universities increasingly opened their doors to the general population, and also expanded their adult education

programs, making separate worker education for older workers unnecessary.

work readiness A relatively new concept relating to a high school graduate's mastery of certain "soft skills" deemed essential for entry-level workers in a broad range of industries. Five states—Florida, New Jersey, New York, Rhode Island and Washington—and the District of Columbia pioneered the concept with a 21/2-hour online test for graduating seniors to measure ability to speak understandably, listen actively, read with understanding, interact cooperatively, observe critically, negotiate and resolve conflicts, solve problems and make decisions, use math to solve problems and assume responsibility for learning. Success on the test yields a "work readiness credential," or certificate, to complement a high school diploma or GENERAL EDUCATIONAL DEVELOPMENT (GED) diploma. Underwritten by a number of business organizations, including the National Association of Manufacturers, the work readiness program was designed by a group called Equipped for the Future Work Readiness Credential Project at the Center for Workforce Preparation of the United States Chamber of Commerce.

Works Progress Administration (WPA)

A federal agency, known later as the Works Projects Administration, created in 1935, during the depths of the Great Depression, to provide the unemployed with the kind of work they were best fitted to do. During its eight years in existence, the WPA not only helped millions of Americans fend off starvation, it also proved to be one of the most remarkable educative institutions ever created by any American governmental entity.

For the unskilled, the WPA created jobs building and repairing country roads and city streets, improving parks and playgrounds and building flood-control and irrigation projects.

The WPA hired skilled laborers such as carpenters, masons, plumbers, electricians and other construction workers to build or repair schoolhouses, libraries, city halls, courthouses and other public buildings. For out-of-work creative artists and scholars, the WPA created the FEDERAL ART PROJECT, which served as an umbrella organization for four divisions that engaged the talents of artists, writers, actors, musicians and architects for the enrichment of the lives of millions of Americans who had never before been exposed to the arts. Out-of-work artists painted murals in public buildings across the nation; musicians and actors played concerts and gave theatrical presentations in schools, libraries, hospitals and community centers. Scholars organized and surveyed national, state and local archives and historical records and compiled oral and written histories.

When the work that the WPA offered to parents threatened to leave millions of preschool children unattended at home, WPA responded by creating a division of education that established nursery schools and parent education programs across the nation. By 1937, it was operating nearly 1,500 nursery schools for almost 40,000 children and conducting 3,270 parent-education classes with an enrollment of more than 50,000. The WPA came to an end in 1943, after World War II had created labor shortages that absorbed the unemployed and made the WPA's work unnecessary.

work study A somewhat confusing term referring to on-campus job programs for needy students to earn part of the costs of tuition and room and board at college or university. Although there are many informal programs whereby a college or university offers students on-campus job opportunities, work study is also the diminutive name of a federal government program initiated as part of the ECONOMIC OPPORTUNITY ACT OF 1964. Officially called the Federal Work-Study Program (FWS), it pro-

vides about \$1 billion a year to help underwrite on-campus and off-campus jobs for needy college students. Under FWS, students earn no less than the federal minimum wage for an average of 10 to 15 hours and never more than 40 hours a week at jobs that range from clerical work to tutoring. FWS pays 80% of the wages, while the college or off-campus employer pays the remainder. The U.S. government sets aside about \$1 billion a year for the program and pays 80% of the wages, with the college or off-campus employer paying the remainder.

World Digital Library (WDL) An on-line repository of international cultural artifacts organized by the United States LIBRARY OF CONGRESS. Backed with \$3 million in seed money from the giant search engine Google, the project was devised in 2005 by librarian of Congress James H. Billington, who envisioned a dedicated search engine to explore national and institutional libraries around the world for a "documentary record of [each nation's] distinctive cultural achievements and aspirations." The model for the project is the Library of Congress's own American Memory Project, which has digitized millions of American cultural artifacts such as Mathew Brady's Civil War photographs and Thomas Edison's first films. The National Library and Archives of Egypt was the first foreign library to contribute to the World Digital Library, with a series of 10th-century documents written by Islamic scientists. WDL is to be open to the public free of charge.

World Learning See EXPERIMENT IN INTERNATIONAL LIVING.

World of Work A secondary school course or series of courses designed to give students a broad understanding and overview of the adult workplace. Usually made up of two one-semester courses, the World of Work curriculum is

designed for both preacademic and prevocational students. The first course explores so-called "job clusters," such as agriculture, manufacturing and health care, and explains the function of individual jobs within each cluster. A second course teaches students the basic elements of the job search: where and how to look for jobs, writing resumes, filling out job applications, how to conduct oneself in interviews and handling all other aspects of looking for, finding and keeping a job. The course also teaches basic job skills such as promptness, proper behavior and the proper conduct of on-the-job relationships with coworkers, employers and clients.

World's Christian Fundamentals Association (WCFA) An organization formed in 1919 by a group of leaders of various fundamentalist Protestant Christian sects to mount a massive, formal education effort to combat secular education in the United States. WCFA was organized at a time when disillusionment over the useless carnage of World War I had captured the national psyche. In addition, 3,600 strikes involving 4 million workers had brought the economy to a virtual halt. WCFA addressed the national fears by accusing "thousands of false teachers" of spreading "damnable heresies" and threatening the nation with "swift destruction."

Some 6,000 turned up for the first WCFA conference to "combat the heresy sweeping the nation" and to organize a "widespread revival in . . . the Word of God." To that end, it formed an education committee to encourage the founding of Bible institutes comparable to the famed Moody Bible Institute in Chicago (see DWIGHT L. MOODY) to serve as alternative educational institutions to secular colleges and universities. By 1919, there were about two dozen such institutes, and with WCFA encouragement their number reached about 100 over the next several decades.

The WCFA education committee developed a common creed and broad curriculum to which Bible schools and institutes would have to subscribe to obtain WCFA endorsement. Endorsements were granted to virtually all applicants, however. Low in cost, the new Bible schools had few formal credit requirements for the degrees they offered, and many deteriorated into so-called DEGREE (OR DIPLOMA) MILLS. Precollegiate in terms of their formal curricula, they offered a variety of practical courses in Sunday school teaching, missionary work, evangelism, street preaching, fund-raising and a host of other subjects of interest to would-be fundamentalist preachers. In addition to formal education, the institutes were centers of informal activities, including prayer meetings, Bible conferences, shared spiritual pilgrimages and collective religious experiences. Bible institutes also sponsored scores of correspondence courses, radio (and eventually television) broadcasts and publishing enterprises.

In 1920, WCFA expanded its original mission by mounting a national campaign against secular education generally and the teaching of Darwinism in particular. It lobbied intensely for passage of state laws to bar the teaching of evolution; its efforts failed in Kentucky, North Carolina and Texas, but it succeeded in Oklahoma, Florida and Tennessee; To obtain broader popular support, WCFA enlisted the aid of William Jennings Bryan, a thrice-defeated candidate for the presidency but nonetheless a popular national figure, who agreed to head WCFA's "Laymen's Movement" against modernism and evolution. In 1925, WCFA asked Bryan to represent it as cocounsel in the prosecution of John Thomas Scopes, a high school science teacher who had violated the new law against teaching evolution in Tennessee. Although Scopes was found guilty, Bryan and WCFA became the targets of worldwide mockery during and after the "Scopes Monkey Trial." Humiliated, Bryan died less than a week later,

leaving the fundamentalist movement splintered. Within a few years, WCFA had all but disappeared.

World Wide Web See INTERNET.

Wright, Carroll D. (1840–1909) American educator and author of the first definitive government study of American vocational education. Born in New Hampshire, he became a schoolteacher to pay for his training in law. After enlisting as a private in the Civil War in 1862, he rose through the ranks and became a colonel in charge of his own regiment by 1864. After the war he practiced law in New Hampshire and Massachusetts, where he entered state politics and was named chief of the Massachusetts Bureau of Statistics for Labor in 1873. In 1885, President Chester A. Arthur appointed him the first commissioner of the Bureau of Labor (later, the Department of Labor), a post he held until 1905. While in that post, he resumed his teaching career, even becoming president of Clark College (now, Clark University), in Worcester, Massachusetts, in 1902.

In 1908, Wright produced a survey of the apprenticeship system in American industry for the United States Bureau of Education. Entitled *The Apprenticeship System in Its Relationship to Industrial Education*, the report criticized "the old apprenticeship system" for exploiting young people by paying substandard wages while locking them into apprenticeship status long after they had learned the skills to progress to higher-paid, journeyman status. Wright was equally critical of manual-training schools for inadequate and impractical instruction that taught young men few of the skills needed on actual production lines. Wright recommended establishment of a new "enlightened, coordinated system that shall secure all that can be gained from the apprenticeship system and all that can be gained from modern schools for trades and industrial education generally."

Wright cited as an example of ideal vocational education the system then in place at the General Electric Company's Lynn, Massachusetts, plant, where a company-operated, four-year school combined academic instruction with shopwork. During the first two years, students concentrated on academics, learning arithmetic, elementary algebra and trigonometry, mensuration, elements of machines, power transmission, strength of materials, mechanics, elementary electricity mechanical drawing, machine design and jig and fixture design. Part of the day was spent on the shop floor, running errands and doing unskilled labor designed solely to give students a familiarity with shop-floor routine. In the last two years, students moved out of the classroom to the shop floor for advanced training, learning simple bench work and stockkeeping at first and progressing to toolmaking, diemaking and machine work.

Wright called the program "the most advanced of apprentice systems" and urged its adoption by American industry. Ironically, Wright's report had little impact, but the concepts he outlined would eventually become the heart of the cooperative VOCATIONAL EDUCATION movement that evolved in the 1970s, when American industry began establishing affiliations with vocational schools and colleges and integrating classroom vocational education with practical in-plant instruction. In addition to his seminal work on apprenticeship, Wright also wrote *The Industrial History of the United States* (1895).

Wright v. Regan A landmark, 1982 decision by the Circuit Court of Appeals for Washington, D.C., prohibiting the federal government from granting tax-exempt status to any private school that practices racial discrimination. Although racial discrimination had been banned at any school receiving any form of public funds, the decision extended that ban to schools receiving indirect government benefits in the form of tax exemptions that derived

from their status as nonprofit organizations. The decision was appealed to and upheld by the U.S. Supreme Court.

writing A method of human intercommunication by inscribing visible symbols on any of a wide variety of surfaces. Unlike copying, the skill of writing is inextricably tied to the ability to think and read. The mere copying of letters and words that are unintelligible to the copier does not constitute writing.

The earliest forms of writing were limited systems of pictography. From the earliest pictographic systems that represented only concrete objects, two modern, full systems of writing evolved that communicated abstract concepts through symbols: ideographic systems, in which each symbol represents a word, as in Chinese, and alphabetic systems, with each symbol representing a phoneme, or unit of speech, as in English.

The first known full systems appear to have developed among the Sumerians of Mesopotamia sometime before 3000 B.C. Full alphabetic writing that distinguishes between vowels and consonants was developed about 800 B.C. by the ancient Greeks. Like reading, however, writing as a means of mass communication had the potential for promoting popular disaffection; thus writing, like reading, remained a skill taught only to the ruling classes throughout the Greek and Roman eras and, during the early Christian era, only to aspiring members of the church hierarchy. Writing lagged behind reading in its development as a popular skill. In the English-speaking world, reading as a popular skill can be traced to John Wycliffe's translation of the Bible into English at the end of the 14th century. Writing, however, dates only to the expansion of schooling under the Tudors in 16th-century England. By the time settlers opened their first schools in the American colonies, writing and ciphering, along with

reading, had become the foundation of all instruction.

In modern American education, writing instruction generally begins in kindergarten, with the teacher translating spoken words into print. Individual children orally describe an experience or relate an imaginary story, and the teacher carefully writes each word on the chalk board in large letters. As the letters appear, the children gradually learn how letters and words are formed and, inevitably, begin imitating the process, both with the urging of the teacher and on their own. Individual progress is tied to the rate of development of each child's intellectual and motor skills.

Unlike earlier, traditional writing instruction, many schools now de-emphasize spelling and penmanship in early writing instruction. The theory is that children instinctively enjoy communicating, but their limited attention spans tend to make endless writing, rewriting and shaping of individual letters and words discouraging to the writing process. Instead of focusing on penmanship and motor skills, therefore, many reading programs emphasize storytelling as a basic form of communication to enhance children's thinking skills while postponing the development of mechanical writing skills.

They support their criticisms of traditional writing instruction with results from the NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS testing (NAEP), which found only 28% of fourth graders, 31% of eighth graders and 24% of twelfth graders proficient in writing; 15% of the two younger groups and fully 26% of the twelfth graders—high school seniors about to graduate—were unable to demonstrate even the most basic writing skills. Critics of traditional writing instruction found even more support in the failure of average writing skills to improve over the years, as students now register either the same or lower scores than students in seven previous NAEP tests since 1988.

American fourth graders scored only 207 on writing achievement tests (scored on a scale from 0 to 500, with 300 considered a minimum level of "adequate" proficiency). The average scores for fourth graders were relatively unchanged in tests of 11 writing skills administered every other year, from 1984 to 1998. Scores of eighth graders actually fell during those years, from 267 to 264, while scores of eleventh graders fell from 290 to 283. Although there were significant differences in average scores in each grade on the basis of race, ethnicity, economic status, parental education, region and type of school, not a single group scored as high as 300 or better.

The poor performance provoked radical changes in the teaching of writing at some schools, to the so-called whole language method of instruction, with kindergarten children encouraged to write by using their own personal, phonetic spellings (and to read aloud what they write) rather than to copy letter after letter and word after word to improve their penmanship and spelling. Children write and read phonetically with amazing ease and not inconsiderable joy and a sense of accomplishment. Instead of rote learning, a type of evolutionary learning takes place, as students watch (and later imitate) the teacher slowly spell each word correctly on the chalkboard, with bold, carefully formed letters.

Unlike kindergarten, where children decide what they write, most first grade programs see teachers begin to assign specific writing tasks—usually related to social studies, science or class trips. Children are encouraged to illustrate their stories, making the important connection between the visual and the abstract letter symbols that describe the visual. Through the first grade, extended periods of time are set aside for students to express themselves on paper. Depending on content, stories are shared either privately with the teacher or publicly with the entire class. In almost all cases, the stories are

edited and rewritten to improve spelling, content and organization. The emphasis, however, is always on content, until motor skills permit a shift toward legibility and spelling and students are mature enough to recognize the importance of standards in effective communication.

Many teachers in the early elementary grades now use so-called “process writing” as a basic pedagogical technique. Under the process-writing approach, students engage in “brain-storming” sessions, listing rough ideas or thoughts, with no concern for spelling or punctuation. Then they write rough drafts, edit them with their teachers and produce a “publishable” paper. Teachers say recording thoughts and wild stories without fear of being “wrong” liberates young minds and engenders a deep appreciation of writing and communication. Although the process-writing technique is effective throughout the elementary school years, most teachers gradually attempt to introduce discipline into the program by the third grade, when most students have developed motor skills sufficiently advanced to learn cursive writing, and the intellectual maturity and discipline to learn proper spelling, punctuation and rules of grammar.

(See also *READING*.)

writing center A section of the elementary school classroom where students can engage quietly in original writing, apart from the rest of the class. In addition to writing and resource materials such as word processors, software, dictionaries and encyclopedias, the writing center features displays of student work, including poems, stories and other written materials.

Wygant v. Jackson Board of Education A 1986 United States Supreme Court ruling that a school board, in an effort to cut costs, could not preserve the jobs of black teachers by laying off white teachers. Although it ordered the school board to equalize its layoff procedures, the Court made it clear that the ruling applied

only to racially based layoffs. It specifically reaffirmed the constitutionality of affirmative action programs to integrate teaching staffs.

Wyoming The 44th state to join the Union, in 1890. The first school was built at Fort Laramie in 1852, and in 1869, a year after Wyoming became a territory, the territorial legislature enacted a then-radical school law, providing for establishment and maintenance of schools through a system of general taxation. The legislature’s forward-looking stance on education came at the same time that it made the state the Western world’s first governmental entity to grant women the right to vote. Four years later, the legislature established a uniform curriculum for all elementary and secondary schools.

The least populated state in the nation, with only about 500,000 people, Wyoming has fewer than 400 public elementary and secondary schools with a student population of less than 88,000, who rank seventh in the nation in academic proficiency. Nearly 13% of students are minorities, and 12% live in poverty. Academic proficiency is among the highest in the nation; fourth graders scored fourth in reading proficiency and eighth in math proficiency in 2005 national tests, and eighth graders 11th and 19th in those disciplines. The state has only one four-year institution of higher education, the University of Wyoming, a public institution in Laramie with fewer than 13,000 students and a graduation rate above 54%. There are seven public community colleges and one private two-year college. Wyoming is the only state with no private, nonprofit, four-year colleges.

Wythe, George (1726–1806) American patriot, lawyer and educator and the first professor of law in any American college. Born in Virginia, he had little formal education but was tutored by his mother and studied law under the then-common clerk system, which was a

form of nonindentured apprenticeship that preceded the establishment of law schools. Admitted to the bar in 1746, he practiced law for nearly a decade before involving himself in Virginia politics. A member of the House of Burgesses in 1754–55 and from 1758 to 1768, he gained a reputation as one of the colony's leading legal scholars. Among the clerks he trained as lawyers were THOMAS JEFFERSON, who studied with him from 1762 to 1767, and JAMES MONROE.

A strong advocate of American independence, he drafted the initial Virginia protest of the Stamp Act and was elected to the Continental Congress in 1775. A year later, he signed the Declaration of Independence. After independence, he returned to Virginia to serve in the House of Delegates, then on Virginia's Court of Chancery and finally as chancellor, or chief judge, of the state. In 1779, he was appointed to the newly created chair for professor of law at WILLIAM AND MARY COLLEGE—the first such professorship in the United States

and the first sign of an approaching end to the traditional apprenticeship system of training for the bar.

In his 10 years at William and Mary he helped shape the course of formal legal education in the United States, supplementing his lectures with student-conducted moot courts and moot legislatures. Among his students was John Marshall, the future chief justice of the United States Supreme Court. In 1787, Wythe served in the federal Constitutional Convention and, the following year, led Virginia's ratifying convention. By 1790, age and the hardships of travel forced him to choose between his judicial post in Richmond and his teaching position at William and Mary. He chose Richmond, where he continued his work on the bench, and opened a private law school, where he trained, among others, Henry Clay (1777–1852), the future speaker of the House of Representatives. One of the earliest American abolitionists, he freed his own slaves after independence and provided for them in his will.

Y

Yale, Elihu (1649–1721) English colonial administrator who, between 1714 and 1721, bestowed so extensive a library of books and other gifts to the Collegiate School of Saybrook, Connecticut, that it changed its name to Yale College in 1718, two years after it moved to New Haven.

Born in Boston, he was the son of an American colonist who returned to England in 1651. He received his education in London and went to work for the English East India Company, which assigned him to a post in Madras, India, in 1670. Rising rapidly through the ranks, he amassed a personal fortune in private trade along the way. In 1687, he was named governor of Fort Saint George, but a scandal involving his administration led to his removal five years later. He continued in private trade in India until 1699, when he returned to England and became a governor of the East India Company. During those years, he had maintained a correspondence with his nephew in the colonies, a minister who had joined in founding the Collegiate School. The nephew prevailed on his uncle for a donation that eventually turned into the largest private gift ever made to a college at that time.

“Yale Band” An informal association of seven theology students at Yale College who, before their ordination in 1830, pledged to devote their lives to “beating the drums for”

and establishing formal education in the West. ASA TURNER, the Massachusetts-born leader of the “band,” established a church in Quincy, Illinois, the same year and, with fellow band member Julian Monson Sturtevant (1805–86), became a founding trustee of Illinois College. He devoted the next eight years to educational causes in Illinois before moving to Iowa where he assisted an “Iowa Band” that had formed at Andover (Massachusetts) Theological Seminary to help bring public education to Iowa. The Iowa Band led the campaign to establish public schools in Iowa and founded Iowa College, which later merged with Grinnell College.

Yale College (and University) The third oldest institution of higher education in the United States, after HARVARD COLLEGE and the COLLEGE OF WILLIAM AND MARY. Founded in 1701 as the Collegiate School, in Branford, Connecticut, it granted its first bachelor of arts degree in 1703 and moved to Saybrook (now, Old Saybrook), Connecticut, four years later. Like Harvard, Yale was a divinity school dedicated to the training of Congregationalist ministers who would perpetuate the Puritanism of their forebears. At the time, the colonies were suffering an acute shortage of ministers to serve their burgeoning populations, and the Connecticut population was growing especially quickly. The Puritans were a minority in England and could ill afford to send their pastors

to the colonies, and Harvard was no longer able to supply the growing demand. Moreover, Harvard had become somewhat suspect for its religious liberalism. Clearly, Connecticut needed its own divinity school, and Yale was founded expressly for the “upholding and propagating of the Christian Protestant religion by a succession of learned and orthodox men.”

In 1716, the college moved to New Haven, and two years later changed its name to Yale in honor of the Boston-born merchant ELIHU YALE, who gave the college the largest gift it would receive until 1837, in the form of a sizable library and other goods. Together, Harvard and Yale supplied the colonies with 850 ministers between 1701 and 1740. By mid-century, however, a growing number of Yale students were enrolling simply to take advantage of the education there: During the 1760s, only one-third of Yale’s graduates entered the ministry, compared to well over half during the early part of the century. Class size seldom exceeded 30 students, but the proportion of ministers emerging was nevertheless declining, while the number of future physicians and lawyers was increasing—as it was at Harvard and other colleges that had started as divinity schools.

In the 1760s, Yale students were swept up in the fervor for national independence. After weeks of rioting, they forced the president of Yale to resign and the trustees to replace him with a professor more devoted to national independence than to the church. By 1773, formal education all but ended at Yale (as well as at Harvard and Princeton), as students regularly boycotted, condemned and burned British effigies and crates of tea. By 1776, patriotic students, with the encouragement of acting president Naphthali Daggett, a popular divinity professor, controlled the institution, and a year later, the Rev. EZRA STILES, an ardent advocate of independence, was named president. By 1779, the faculty and students were engaged in the defense of New Haven against a British

invasion, with Professor Daggett, armed with only a “fowling piece,” emerging a hero by singlehandedly fending off an attack by a detachment of British regulars.

Yale reemerged as a leader in higher education in the years from 1795 to 1817, when its president, TIMOTHY DWIGHT, established Yale’s first professional schools (including the medical school, in 1813) and converted the college into a university. By 1820, Yale was the country’s largest and most influential college, with the most geographically diverse student body. Its graduates were founding new colleges and extending Yale’s influence over higher educa-



The Harkness Tower at Yale University, New Haven, Connecticut

tion across the nation. In the forefront of the trend toward departmentalization, Yale officials grew somewhat alarmed by the increased introduction of nonacademic subjects such as mechanics and agriculture into higher education. With the famous Yale Report of 1828, they helped shape the curricula of American colleges and universities for the next 30 years, until the establishment of the first public land-grant colleges and state universities after the Civil War. The report urged traditional colleges and universities to limit their curricula to liberal arts programs and allow scientific and technical institutes and professional schools to teach engineering and other specialized subjects. It said the object of a college was "to lay the foundation of a superior education." It called the "study of the classics . . . the most effectual discipline of the mental faculties."

The emergence of land-grant institutions of higher education and the spread of public education undermined Yale's status as a pioneer educational institution during the latter half of the 19th century, although its graduates continued to exert influence in education, as well as in the arts, industry and government. In its first two centuries of existence, its graduates included Nathan Hale, JONATHAN EDWARDS, NOAH WEBSTER, James Fenimore Cooper, Eli Whitney, Samuel F. B. Morse and William Howard Taft, along with a legion of men who headed schools and colleges that would grow into some of the nation's leading educational institutions.

During the second half of the 19th century, however, it was Yale's arch-rival Harvard that pioneered the major advances in private higher education. After CHARLES ELIOT had made Harvard the model of the modern university at the turn of the century, Yale followed suit, and, along with Harvard, it remains one of the world's foremost universities. In addition to its undergraduate college of about 5,300 students, Yale boasts some of the nation's foremost grad-

uate schools of medicine, law, architecture, art, drama, music, forestry, business and divinity. Its 43 libraries hold about 11 million volumes, and the Yale University Art Gallery is the nation's oldest college-affiliated art museum. The Yale Center for British Art houses the largest collection of British art in the world outside of England, and the extraordinary Museum of Musical Instruments contains more than 800 rare instruments.

Yale-New Haven Teachers Institute A pioneer collaborative venture between Yale University and the public school system of the city of New Haven. Founded in 1978 and funded by the Carnegie Corporation, the College Board, the Ford Foundation, the National Endowment for the Humanities, a bank and a private foundation, the institute brought together public school representatives, a university advisory council, a national advisory committee and individual fellows in English, history, languages, art, science and mathematics in an effort to strengthen teaching and learning in the city's public middle schools and high schools. Largely populated by students from low socioeconomic backgrounds, the failing New Haven public school system was seen as a perfect laboratory in which to study new approaches to educating and motivating the growing inner-city student populations of the nation's cities. By 1999, the institute had retrained nearly 500 inner-city teachers, most of whom (like their colleagues in inner-city schools across the nation) had not majored in the subjects they were teaching. In addition to in-depth instruction in each teacher's academic discipline, institute seminars offered wide-ranging instruction in teaching techniques, testing, and other areas of basic pedagogy. In addition, the institute established summer academies to raise academic proficiency of inner-city students. The effort became the cornerstone of a National Demonstration Project

that established four similar university-school district partnerships in Pittsburgh (Chatham College and Carnegie Mellon University), Houston (University of Houston), Albuquerque (University of New Mexico) and Santa Ana (University of California at Irvine).

yearbook (student) An annual high school, college or graduate school student publication, usually published in hardcover, to commemorate the events of the previous academic year. Produced by seniors, often in collaboration with a faculty adviser, the book is usually divided into several sections, the largest and most important of which contains individual photographic portraits of each graduating senior along with a biography detailing his or her school career and future plans. Other sections are devoted to athletic teams, extracurricular activities, the year's events and the faculty. Sold to students, parents, friends and faculty, yearbooks, or annuals, as they are often called, usually contain paid advertisements to defray publication costs.

year-round school A school that operates a 12-month-a-year academic program to ensure maximum utilization of school facilities and accommodate a larger number of students without investing in plant expansion. Los Angeles was the first American city in recent years to adopt year-round schooling at selective school districts, in the early 1980s. Although new to the present-day school population, year-round schooling was the norm in colonial era and 19th-century America, when the school schedule was not based on education needs but those of an agricultural society. The school year was, therefore, divided into the four calendar quarters, with a "vacancy" of about two weeks at the end of each, timed to allow boys to help their farmer-parents with spring plantings and fall harvests—and to enjoy the Christmas holidays.

Nearly one in five of the nation's large, urban, public school districts operated schools year-round in 2001—primarily to reduce overcrowding. About 2 million students attended such schools—nearly 4% of the public school population. Year-round schools operate on a three-track system that gives students four months vacation a year, with A-track students off in July, August, January and February; B-track students off in September, October, March and April; and C-track students off in November, December, May and June. All students have Christmas week off. Although designed to produce economies, year-round education is not without its own costs. To operate throughout the summer months, most older schools require costly retrofitting of air-conditioning systems. Moreover, costs of staff and teacher salaries, normally based on nine-month contracts, climb by as much as one-third. In addition, year-round schooling is often disruptive to routine family life, forcing families—especially those with B-track and C-track students—to schedule vacations at times that can prove inconvenient for working parents. Students, too, often suffer—especially when separated from friends who are shifted to a different track.

(See also SCHOOL CALENDAR.)

yeshiva (or, yeshivah) In American education, a generic term referring to any of a variety of Jewish day schools, depending on their sectarian sponsorship. Most day schools that bear the capitalized name *Yeshiva* are normally religiously-based Orthodox elementary schools. Conservative Jewish schools, while called yeshivas in the generic sense, seldom include the word *yeshiva* in their title. Conservative yeshivas are usually K–12 day schools that provide a combination of conventional secular American education and Jewish religious instruction comparable to the kind of religio-secular education given in Catholic parochial and diocesan schools. Although some Reform

Jews send their children to religio-secular schools, the majority rely on nonsectarian schools and reserve Jewish education to synagogue-sponsored Sunday schools.

Originally, *yeshivas* (or *yeshivot* in Hebrew) were European secondary schools, or academies, devoted exclusively to study of the Talmud, the huge and complex compilation of Jewish traditions and behavioral rules and regulations. Such talmudic study was in preparation for later study for the rabbinate. Although it now connotes a school, the word *yeshiva* does not actually mean school. *Yeshiva* is derived from the Hebrew root "to sit." A modern *yeshiva* in the literal sense, therefore, is simply a place to sit—and, presumably, to study.

Young Men's and Young Women's Hebrew Association (YM-YWHA) Any of more than 400 local organizations that provide educational cultural, recreational, health, social and other services to about 750,000 people of all ages—non-Jewish as well as Jewish. With few exceptions, now called Jewish Community Centers, the YMHA was an outgrowth of informal Jewish literary associations that flourished in the United States during the mid-19th century. They grew into the more formal Young Men's Hebrew Literary Associations, about 70 of which were formed before the end of the 19th century.

The first formal YMHA was founded in Baltimore in 1854, and in 1888 the world-famous New York YMHA ("the 92nd Street Y") and auxiliary for women was founded. All these organizations merged to form the National Council of Young Men's Hebrew and Kindred Associations in 1913, and that organization merged with the National Jewish Welfare Board in 1921, which served as the umbrella association for the hundreds of Jewish Community Centers across the nation. It subsequently changed its name to the more appropriate Jewish Community Centers Association of North America.

Although open to non-Jews, YM-YWHAs and Jewish Community Centers normally serve Jewish residents of their local communities. Although some community centers are affiliated with adjacent or nearby synagogues, the term is a generic one, and the true Jewish Community Center of YM/YWHA is a lay organization devoted to the enhancement of Jewish family life, welcoming temple-goers and non-temple-goers alike. Jewish Community Centers offer a wide range of activities, including arts and crafts, dramatics, physical education, lectures and forums. Some sponsor day camps and summer camps and international exchanges with similar organizations in Israel. New York's 92nd Street Y has a world-class auditorium, where it sponsors concerts by celebrated performers, along with dramatic readings by renowned authors. It also has a full program of educational activities for youths and adults.

Young Men's Christian Association (YMCA) An international organization with 26 million members around the world, sponsoring social, physical and educational activities for youths and adults of both genders as well as all religions, races and ethnic backgrounds. The YMCA was founded in London in 1844 by the British humanitarian Sir George Williams (1821–1905) to provide prayer meetings and Bible study for destitute young men on the streets of London. By 1851, the concept had spread to Europe and the United States, with the first unit in the United States founded in Boston in 1851. Similar groups formed in New York, Philadelphia and other cities, and by 1854 there were 26 associations in North America.

The American Civil War all but ended the movement, but a number of evangelists, including DWIGHT L. MOODY, managed to revive it in the late 1860s and 1870s, and a series of well publicized conventions spurred the formation and growth of a national movement. Inspired

members fanned out into cities across the United States to preach on street corners in slums, distribute tracts in boarding houses, hospitals and jails, and conduct Bible classes and prayer meetings. The YMCA began putting up buildings with libraries, auditoria for lectures, and Spartan, albeit adequate hotel rooms to provide temporary housing for destitute young men. In the 1890s, it expanded its program to include regular evening classes, which soon became known as “a college of the people” and included courses in elementary school subjects for boys who had gone to work before they could obtain a basic education. Other courses in English and American citizenship were added in some cities to accommodate young immigrants; by the end of the century, the “Y” was even offering vocational education for boys who wanted to improve their lot by learning skilled trades.

By 1913, the association was enrolling nearly 75,000 students a year in courses ranging from accounting to public speaking to wireless telegraphy. In every major city, buildings rose to accommodate the Y's ever-expanding activities. By 1916, the Y had a membership of 600,000, and its buildings were complete with libraries, gymnasias, swimming pools and other facilities. It opened summer camps and pioneered physical education at a special school of physical education it established in Springfield, Massachusetts, to train teachers to promote physical fitness among the young. It was at this YMCA Training School that basketball and volleyball were invented. Now known as Springfield College, the YMCA Training School eventually made physical education the heart of YMCA activities.

The YMCA also trained thousands of students on college campuses to serve as missionaries overseas. In addition to missionary work, many established new YMCAs that were eventually turned over to local control. During World War I, it sponsored war relief activities,

and in World War II, it joined with six other organizations to form the United Service Organizations (USO) to provide entertainment and social services to millions of American servicemen around the world. As it reached out to more and more Americans, the YMCA evolved into an ecumenical, quasi-public organization, serving Catholics and Jews as well as Protestants and, by the 1950s, women as well as men. Its success as a universal service organization all but ended its original religious role. Among the main programs of today's YMCAs are swimming, aquatic exercise, aerobics, fitness classes, child care, day camps and youth sports. Many also provide emergency shelter, day care for the elderly, job training, rehabilitation classes for the disabled and youth counseling. Each of the 2,400 branches functions independently and is governed by volunteer board members who determine policy according to the needs of their community. Serving about 13.5 million people a year, the organization maintains a national council at its headquarters in Chicago.

Young Women's Christian Association (YWCA) An international organization dedicated to the personal, social and physical development of girls and women aged 12 and older. The oldest volunteer women's membership movement in the United States, the YWCA was inspired by the 1855 merger of two British women's organizations—the Prayer Union, which sponsored church-like activities, and the General Female Training Institute, founded as a home for nurses returning from the Crimean War. The new Women's Christian Association began serving the thousands of women who had flocked to cities during the industrial expansion of the late 1800s to find jobs—only to find poverty-level wages and unemployment. A similar phenomenon in the United States spurred the founding of the Ladies' Christian Association in New York City, to work for the “temporal, moral, and spiritual

welfare of the self-supporting young woman." Later that year, a similar group calling itself the Young Women's Christian Association formed in Boston.

As YWCAs formed in other cities, they provided many of the services that YMCAs provided for young men: Christian spiritual guidance, housing facilities, recreation and physical training, and formal education, including classes in such academic subjects as reading and writing, penmanship, arithmetic, science and music, and such vocational subjects as sewing, needlework, dressmaking, typing, book-keeping, clerical and secretarial work, telegraphy, interior decorating and commercial art. Like YMCAs, YWCAs recruited missionaries on college and university campuses, and established camping programs that provided inexpensive summer vacations for working girls.

Unlike YMCAs, however, YWCAs have always remained far more decentralized, with only loose ties to a National Board in New York City that was not even founded until the first decade of the 20th century. Moreover, YWCAs traditionally remained more committed for a longer period of time to their evangelical mission than did YMCAs, whose early attraction to sports and physical fitness diluted their original mission. During the 1920s and

1930s, YWCAs concerned themselves with social service and with the training of women for jobs that had been inaccessible to them prior to woman suffrage and the development of the women's rights movement.

After World War II, as formerly all-male colleges and universities opened their doors to women and as the job market expanded and provided women with more opportunities, YWCA membership plunged by nearly 25%, and those branches that survived reached out to wider audiences, including many non-Protestants. Men and boys may now join as associate members. Like YMCAs, many YWCA branches have evolved into nonsectarian, quasi-public organizations. Branches remain totally independent, however, and are operated and funded by volunteers and are dedicated to a variety of widely varying activities designed to meet the needs of each particular community. Not all YWCAs are housed in formal structures. Many are simply affiliated organizations in churches, libraries, schools, colleges, community and student associations, women's residencies and shelters and resident camps. Total membership has surpassed 25 million members in 122 countries—about 2.6 million of them participating in 300 local chapters across the United States.

Z

Zelman v. Simmons-Harris A 5-4 United States Supreme Court decision in 2002 that the SCHOOL VOUCHER program in Cleveland, Ohio, was constitutional. The Court declared that any program that allows parents to use vouchers to pay for religious school tuition for their children was constitutional as long as the state and school district remained “neutral” with respect to religion and designed the program solely to broaden the choice of schools for children in districts limited to failing public schools. In this case, the district “failed to meet any of the 18 state standards for minimal acceptable performance,” according to the Court decision. “Only 1 in 10 ninth graders could pass a basic proficiency examination, and students at all levels performed at a dismal rate compared with students in other Ohio public schools. More than two-thirds of high school students either dropped out or failed out before graduation. Of those who managed to reach their senior year, one of every four still failed to graduate. Of those who did graduate, few could read, write, or compute at levels comparable to their counterparts in other cities.” Under those circumstances, the Court ruled, the Cleveland, Ohio, program “benefits directly to a wide spectrum of individuals . . . [and] permits . . . genuine choice among options public and private. . . .”

zero-based budgeting A system of planning annual spending that disregards previous

spending levels and creates each year’s new budget from a base of zero. Developed at Texas Instruments Inc. in the 1960s and adopted by many corporations and government agencies as a cost-cutting measure, the process has found widespread use in many school districts. As in business, zero-based budgeting forces administrators to justify and rejustify each item of spending every year, thus eliminating the inertia that allows automatic reapproval of budget items that might well be eliminated or reduced. Zero-based budgeting has proved especially effective in cutting the cost of noninstructional services, where careful annual reconsideration often results in subcontracting of such services to private firms at reduced cost. Zero-based budgeting can, to some extent, reduce instructional costs by forcing annual reevaluation of the cost per student of each course and staff member.

zero reject A concept derived from the federal Education for All Handicapped Children Act of 1975 and subsequent court decisions requiring public school districts to provide all handicapped children with free, appropriate education. The act, in effect, reduced handicap-based student rejection rates to zero.

zero tolerance A nonnegotiable policy at elementary or high schools whereby a student caught violating specific rules, regardless of any

extenuating circumstances, is automatically suspended or expelled from school. Zero tolerance policies apply to student behavior 24 hours a day, seven days a week, thus ensuring punishment on Monday morning at school for a student involved in any confrontation with police over the weekend. The specific rules subject to zero tolerance vary from school to school and can extend across a broad range of offenses, from ordinary roughhousing and playground scraps to outright violence. The degree of punishment ranges from detention to two-year expulsion for carrying drugs or weapons to school. Many American public schools began instituting zero tolerance after passage of the SAFE SCHOOLS ACT OF 1994, which stipulates that schools must expel students carrying weapons or drugs or lose federal aid. Federal funds make up about 7% of all public school revenues in the United States. Although some schools were slow to extend the policy to less serious disciplinary problems, their reluctance all but disappeared in 1999 and 2000, after a disastrous epidemic of shootings by students in schools across the United States. On April 20, 1999, two students at Columbine High School in Littleton, Colorado, shot and killed 12 students and a teacher and wounded almost two dozen others before killing themselves. A month later, a 15-year-old gunman wounded six students at a high school in Conyers, Georgia. In December, a Fort Gibson, Oklahoma, middle school student opened fire with a semi-automatic handgun and wounded five students, and, in February 2000, a first grader in a Michigan elementary school pulled out a gun and shot and killed a six-year-old girl in his classroom as his classmates and teacher watched in horror. A year later, in March 2001, two students at Santana High School, Santee, California, shot and killed two students and wounded 13 others.

Critics of zero tolerance argue that it eliminates faculty and administrator discretion to

resolve childish disputes on-the-spot and thus teach children about conflict resolution, respect and trust of authority. Indeed, zero tolerance in many schools forbids teachers to resolve any physical confrontation with a lecture. Instead, they must file reports with administrators to permit uniform policies to run their course and deal specific punishments for specific offenses, regardless of extenuating circumstances. Just as many experts on adolescence, however, counterargue that youths must learn that unacceptable behavior means certain punishment. And they cite statistics showing that after zero tolerance became the rule in most schools, juvenile arrests for violent crime—murder, rape, robbery, and assault—plunged 42% to their lowest levels in 25 years, to just over 71,000. The number of juvenile arrests for murder plummeted nearly 64% from its peak, while forcible rape fell 28.5%, robberies 51% and aggravated assaults more than 31%. The number of arrests for weapons law violations fell more than 42%. Drug abuse was less tractable, however, falling only about 14%. Although heroin and cocaine use dropped more than 48%, use of synthetic narcotics and dangerous nonnarcotic drugs increased 85% and 16%, respectively. Marijuana use remained relatively unchanged during the same 25-year period, during which about 10 million juveniles were arrested annually for possession. Moreover, adolescent attitudes toward high-risk behavior also changed dramatically, with 40% of teenagers condemning peers who used drugs, compared with fewer than 20% a decade earlier.

(See also ADOLESCENCE; DRUG ABUSE; VIOLENCE.)

zoological garden A nonacademic educational institution that displays live animals for public enjoyment, education, conservation, research and, often, for profit, depending on the financial status of the institution. Popularly known as zoos and a valuable adjunct to

classroom studies of zoology, modern zoological gardens attempt to simulate the native habitat of each species and often offer opportunities for threatened species to breed. Zoological gardens date from the earliest civilizations, and rulers in Egypt, China and elsewhere kept collections of animals for their personal enjoyment. In Europe, the first modern zoo—a collection of caged animals—was the Imperial Menagerie established in Vienna in 1752 and opened to the public in 1828. The Jardin des Plantes (Botanical Garden) was the first zoo to surround its cages with gardens. The oldest zoo in the United States is New York's Central Park Zoo, which opened in 1864. Until the 1970s, it followed the traditional practice of most zoos of housing their wide variety of beasts in bare steel cages that allowed animals only to pace endlessly in circles during their waking hours. In the final decades of the 20th century, the zoological organizations that operate zoos in New York and other major cities began doing away with cages in order to let animals roam free in large fields and forests surrounded by fences or moats too high or too deep for them to escape. For viewing purposes, many zoological gardens installed monorails or other forms of protected transportation that allowed visitors to safely watch the animals in their natural habitats.

Zorach v. Clauson A 1952 United States Supreme Court decision that upheld a New York law permitting public schools to release students to attend religious instruction that took place outside public school grounds and did not require public financial support. The case represented a partial reversal of a 1948 ruling in *People of the State of Illinois ex. rel. McCollum v. Board of Education*, which is better known as the *McCollum* case (see *MCCOLLUM v. BOARD OF EDUCATION*). In that case, the Supreme Court had ordered the public schools of Champaign, Illinois, to cease the practice of releasing students for religious instruction with clerics on public school grounds. A then-common practice in schools across the United States, the excusing of students from classes to attend religious instruction in public school facilities was deemed a violation of the establishment clause of the First Amendment of the Constitution, because it involved "too great" a cooperation between church and state. But the *McCollum* decision also interfered with First Amendment rights of students to free exercise of religion. *Zorach* resolved the conflict created by *McCollum* by letting students exercise their religious rights—but off publicly supported school property and without any public financial support, such as school transportation or extra tutoring for students to make up classroom work missed because of religious instruction.

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The bibliography is divided into 41 sections, each of which has been organized on the basis of the most likely needs of the student of education or professional educator. Thus, the bibliography for administration is divided according to administrative function and subfunction—elementary school administration, secondary school administration, student affairs and so on, with works listed alphabetically by title. Biographies, on the other hand, are organized alphabetically according to the subject of each biography. The bibliography includes works of the broadest possible scope and does not replicate all the reference works cited in the body of the encyclopedia. Because of their reach, certain works appear in more than one category. Many of the works are either standard texts of long standing in their subject areas or older, classical works that scholars of education continue to use as basic references. Although almost all of these have reappeared in many subsequent printings and even on the Internet, only the original copyright dates are shown below.

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APPENDIX A: CHRONOLOGY

1607 First permanent English settlement established in the American colonies, in Jamestown, Virginia.

1621 Pilgrims establish first permanent settlement in the northern colonies, at Plymouth, Massachusetts.

1635 Boston Latin School is first school established in the Americas.

1636 First college opens in Cambridge, Massachusetts, as a Congregationalist divinity school, named after benefactor the Rev. John Harvard.

1643 First school in southern colonies, the Syms School, established in Virginia.

1647 Massachusetts passes “the Old Deluder Satan” law. A precedent for future American education, the law is first to make education compulsory and an obligation of government rather than the church.

1679 William Penn enunciates Quaker policy of universal public education in Pennsylvania.

1693 Anglicans found College of William and Mary, in Williamsburg, Virginia, to support Church of England and loyalty to the Crown against Harvard’s Congregationalist preachers from the North.

1701 Society for the Propagation of the Gospel in Foreign Parts founded in London to spread Christianity, build churches and spread education throughout the American colonies.

Yale University founded as the Collegiate School in Connecticut to meet New England’s growing need for Congregationalist ministers.

1720 The Great Awakening begins as a religious movement, but it inflames fervor for independence and universal education in the colonies.

1727 Benjamin Franklin founds first “public” library at the American Philosophical Society, Philadelphia.

1732 Benjamin Franklin begins publishing *Poor Richard’s Almanack*, the first educative journal for “conveying instruction among the common people. . . .”

1746 College of New Jersey (later, Princeton) founded at Princeton, New Jersey, by Scottish Presbyterian “school of common sense.” Early graduates form a core of founding fathers of the United States.

1751 Benjamin Franklin founds Franklin’s Academy, the first secular educational institution in the American colonies tied to practical rather than theological learning.

1754 King’s College (later, Columbia) founded in New York City to preserve Anglicanism and loyalty to the Crown in the northern English colonies.

1765 John Morgan establishes first formal program of medical education in the colonies, at College of Philadelphia (later, the University of Pennsylvania).

1774 Tapping Reeve opens first "law school" in American colonies, in Litchfield, Connecticut.

1776 American colonies declare independence from England.

1779 Virginia rejects Thomas Jefferson's proposal to establish the first free universal public education school system in the United States.

1783 Noah Webster begins publishing first "American system of instruction," to meet needs of new nation and educate "all ranks of society."

1786 Artist Charles Willson Peale founds first public museum, in Philadelphia.

1789 The United States Constitution adopted as supreme law of the land. Universal public education voted down by southern proponents of slavery and northern advocates of child labor. Education omitted from final document and left to state controls.

1795 North Carolina opens first state university.

1796 Thomas Paine's *The Age of Reason* calls for stripping the church of control over education and establishing universal public education.

1802 United States Military Academy founded at West Point, to train officers in military science and for the new profession of civil engineering.

1806 Noah Webster celebrates the American language with publication of *A Compendious Dictionary of the English Language*.

1811 Elkanah Watson founds Berkshire Agricultural Society, the precursor to the agricultural fair and adult education.

1821 Emma Willard founds Troy Female Seminary, the world's first academy offering a liberal arts and science education for women.

First publicly supported high school, the English Classical School (later, English High School), established in Boston.

1826 Josiah Holbrook founds American Lyceum, the first organized program of adult education and secular, public vocational education.

1830 Catherine Beecher urges American women to make the teaching profession their own. Due in large part to her efforts, over the next 50 years the teaching profession goes from being more than 90% men to more than 60% women.

1836 Horace Mann establishes first secular, state public school system in the United States in Massachusetts.

Mary Lyon founds world's first college for women, Mount Holyoke, in Massachusetts.

1838 Henry Barnard begins the American "public school movement," borrowing from Mann's work in Massachusetts to establish state public school systems, successively, in Connecticut, Rhode Island and Wisconsin.

1839 Horace Mann establishes first state-operated teacher-training school to meet needs of the Massachusetts public school system.

1841 Phineas T. Barnum opens the New American Museum, which begins the museum movement and transforms museums from private, scholarly preserves into public, educative institutions.

1851 Young Men's Christian Association begins campaign to Christianize the people of the United States; widespread poverty and unemployment eventually convert organizational goals to social welfare and vocational education.

1852 Massachusetts passes first compulsory education law in the United States.

1853 Horace Mann opens Antioch College, in Antioch, Ohio, as the first coeducational college in the United States, with both men and women attending the same classes and women on the faculty.

1861 Civil War begins.

1862 Congress enacts first Morrill Act, establishing land-grant colleges and first state university systems.

1863 President Abraham Lincoln signs the Emancipation Proclamation, freeing all slaves held in states in rebellion against the federal government.

1868 Hampton Institute opens in Hampton, Virginia, as first educational institution for former slaves.

1869 Charles W. Eliot inaugurated as president of Harvard College; begins transformation of the American college into modern, secular, American university, with an undergraduate college and a variety of graduate professional schools.

1871 Johns Hopkins University opens as first institution of higher education devoted exclusively to graduate study and research, bringing research into the purview of American university functions for the first time.

1873 First public-school kindergarten established in St. Louis.

1874 John Heyl Vincent founds the Chautauqua adult education movement at Lake Chautauqua, New York.

1881 Booker T. Washington founds first black-operated educational institution at Tuskegee, Alabama.

1886 Social-settlements movement begins in the United States, to provide privately funded social welfare, health care, and basic secular education to unemployed immigrants and their children in American cities.

1887 Dwight L. Moody founds Moody Bible Institute in Chicago, to challenge secular education and lead national effort to Christianize American public education.

1896 United States Supreme Court deems separate-but-equal public facilities for the races constitutional in *Plessy v. Ferguson*.

John Dewey opens University of Chicago Laboratory School, inaugurating age of progressive education.

1903 Charles R. Van Hise transforms University of Wisconsin into model of modern public, state university, serving the entire population of the state, with continuing education to serve adult population.

1912 United States opens U.S. Children's Bureau, the first federal agency devoted to advocacy of children's rights.

1914 United States Department of Agriculture establishes Extension Service to provide millions of rural Americans agricultural education.

1917 United States enters World War I. Armistice in 1918 spurs Gen. John J. Pershing to establish the University of the American Expeditionary Forces in France, the largest educative effort in military history.

1919 Nineteenth Amendment to the Constitution enacted, providing for women's suffrage.

1925 Five-year effort by Christian fundamentalists to ban teaching of evolution culminates in Scopes Monkey Trial. Tennessee high-school teacher is convicted for teaching Darwinism, but trial makes fundamentalism a target of worldwide mockery that temporarily ends its influence over public education.

1929 Stock market crash marks beginning of worst economic depression in American history, with consequent expansion of education to improve worker skills and remove children from job market and expand opportunities for adults.

1933 United States passes child labor law, making it a federal crime to employ workers younger than 16 in most nonfarming occupations and younger than 18 in hazardous industries.

1941 United States enters World War II and creates the most far-reaching military program

in history of primary, secondary, college and professional education for millions of American service personnel.

1944 U.S. Government enacts "G.I. Bill of Rights," providing World War II veterans with free higher education and opening higher education to all Americans, regardless of economic class.

1954 United States Supreme Court reverses *Plessy v. Ferguson* decision of 1896; rules racial segregation of public schools unconstitutional in landmark case of *Brown v. Board of Education of Topeka*.

1964 Congress enacts Economic Opportunity Act, declaring "War on Poverty" and providing federally funded preschool education to millions of economically deprived children through "Operation Head Start."

1965 Congress enacts Guaranteed Student Loan Act, qualifying every American citizen, regardless of economic class, for loans to pay for higher education.

1972 Congress enacts Educational Amendments of 1972, prohibiting discrimination on the basis of sex in educational institutions receiving federal aid.

1975 Congress enacts Education for All Handicapped Act, requiring all public schools to provide free and appropriate education to all handicapped children.

1979 Congress establishes the Department of Education as a cabinet-level unit in the executive, to assume control over all federal programs related to American education.

1991 Charter school movement begins with establishment of first independently operated public school in Minnesota; "school-choice" movement spreads across the United States.

1993 Congress establishes nationwide educational goals for the year 2000 and provides federal grants to states and local communities to reform the nation's educational system in an

effort to achieve those goals. The "Goals 2000" program provides for the first national certification, albeit voluntary, of state and local education standards and assessments.

1994 Federal spending on education reaches nearly \$70 billion, compared to less than \$5.4 billion 30 years earlier. About half is spent on support of elementary and secondary education and 21% on support of postsecondary education, with 22% spent on research at educational institutions and the remainder spent on support of other forms of education.

1995 Public education reform movement spreads across the United States, as states institute new, higher minimum standards of teacher competency and student academic achievement. State governments seize control from local school boards of public schools that fail to educate their children properly.

1996 American public schools launch massive program to "wire" classrooms to permit installation of computers and computer network links at every student desk by year 2002.

1999 Mass shootings by students in elementary, middle and high schools force public schools to adopt zero-tolerance policies and install security devices to screen students, faculty and staff for weapons.

2000 Last of the 50 states joins National Assessment of Educational Progress testing program to assess all public students for academic proficiency in all the major elementary and secondary school core disciplines.

2001 President George W. Bush and Congress launch massive, \$10-billion-a-year national program, the NO CHILD LEFT BEHIND ACT, to close persistently large educational achievement gap between American racial and ethnic groups by 2014.

Sources of Federal Government Funds for Education, by Agency, Fiscal Year 2003: Total Funds = \$124.7 billion

Department of Education, 46.1%
Department of Health and Human Services,
20.4%
Department of Agriculture, 10.2%
Department of Labor, 4.9%
Department of Defense, 4.2%

Department of Energy, 3.3%
National Science Foundation, 2.9%
Department of Veterans Affairs, 2.1%
National Aeronautics and Space Administra-
tion, 1.9%
All other government agencies combined, 4%

APPENDIX B: SIGNIFICANT FEDERAL EDUCATION LEGISLATION, 1787–2006

1787 *Northwest Ordinance* authorizes land grants for the establishment of educational institutions.

1802 *An Act Fixing the Military Peace Establishment of the United States* establishes the U.S. Military Academy. (The U.S. Naval Academy is established in 1845 by the secretary of the Navy.)

1862 *First Morrill Act* authorizes public land grants to the states for the establishment and maintenance of agricultural and mechanical colleges.

1867 *Department of Education Act* authorizes the establishment of the U.S. Department of Education. (Later known as the Office of Education, it becomes a cabinet-level department in 1980.)

1876 *Appropriation Act*, U.S. Department of the Treasury, establishes the U.S. Coast Guard Academy.

1890 *Second Morrill Act* provides for money grants for support of instruction in the agricultural and mechanical colleges.

1917 *Smith-Hughes Act* provides for grants to states for support of vocational education.

1918 *Vocational Rehabilitation Act* provides for rehabilitation through training of World War I veterans.

1919 *An Act to Provide Further Educational Facilities* authorizes the sale by the federal

government of surplus machine tools to educational institutions at 15% of acquisition cost.

1920 *Smith-Bankhead Act* authorizes grants to states for vocational rehabilitation programs.

1935 *Bankhead-Jones Act* authorizes grants to states for agricultural experiment stations. *Agricultural Adjustment Act* authorizes 30% of the annual customs receipts to be used to encourage the exportation and domestic consumption of agricultural commodities. Commodities purchased under this authorization began to be used in school lunch programs in 1936. The *National School Lunch Act of 1946* continued and expanded this assistance.

1936 *An Act to Further the Development and Maintenance of an Adequate and Well-Balanced American Merchant Marine* establishes the U.S. Merchant Marine Academy.

1937 *National Cancer Institute Act* establishes the Public Health Service fellowship program.

1941 Amendment to *Lanham Act of 1940* authorizes federal aid for construction, maintenance and operation of schools in federally impacted areas.

1944 *Servicemen's Readjustment Act*, known as the G.I. Bill, provides funds for the education of veterans. *Surplus Property Act* authorizes transfer of surplus federal government property to educational institutions.

1946 *National School Lunch Act* authorizes grants-in-aid and other assistance to help states provide adequate foods and facilities for the establishment, maintenance, operation and expansion of nonprofit school-lunch programs.

Fulbright Act provides funds for international exchange of professors and students to promote international understanding. Scope expands in 1961 under *Fulbright-Hays Act*, which provides funds for improved foreign-language training and overseas study of foreign cultures.

1948 *United States Information and Educational Exchange Act* provides for the interchange of persons, knowledge and skills between the United States and other countries.

1950 *Financial Assistance for Local Educational Agencies Affected by Federal Activities* provides funds for construction and operation of schools in federally affected areas.

1954 *An Act for the Establishment of the United States Air Force Academy and Other Purposes* establishes the U.S. Air Force Academy.

Cooperative Research Act authorizes cooperative arrangements with universities, colleges and state educational agencies for educational research.

School Milk Program Act provides funds for purchase of milk for school-lunch programs.

1956 *Library Services Act* provides for extension and improvement of rural public library services.

1958 *National Defense Education Act* provides funds to state and local school systems for strengthening instruction in science, mathematics, modern foreign languages and other critical subjects.

Education of Mentally Retarded Children Act authorizes federal funds for training teachers of the handicapped.

1962 *Manpower Development and Training Act* provides training in new and improved skills for the unemployed and underemployed.

Amendment to the *Communications Act of 1934* provides grants for the construction of educational television broadcasting facilities.

Migration and Refugee Assistance Act of 1962 authorizes loans, advances and grants for education and training of refugees.

1963 *Health Professions Educational Assistance Act* provides funds to expand teaching facilities and for loans to students in the health professions.

Vocational Education Act of 1963 increases federal support of vocational education schools; vocational work-study programs and research, training and demonstrations in vocational education.

Higher Education Facilities Act of 1963 authorizes grants and loans for classrooms, libraries, and laboratories in public community colleges, colleges and technical institutes, as well as undergraduate and graduate facilities in other institutions.

1964 *Civil Rights Act of 1964* authorizes the commissioner of education to arrange for support for institutions of higher education and school districts to provide in-service programs for assisting instructional staff dealing with problems caused by desegregation.

Economic Opportunity Act of 1964 authorizes grants for college work-study programs for students from low-income families; establishes a Job Corps and authorizes support for work-training programs to provide education and vocational training and work experience in welfare programs; authorizes support of education and training activities and of community action programs, including Head Start, Follow Through, and Upward Bound; and authorizes the establishment of Volunteers in Service to America (VISTA).

1965 *Elementary and Secondary Education Act* authorizes grants for elementary and secondary school programs for children of low-income families; school library resources, textbooks,

and other instructional materials for children; supplementary educational centers and services; strengthens state education agencies and provides educational research and training.

Health Professions Educational Assistance Amendments authorizes scholarships to aid needy students in the health professions.

Higher Education Act of 1965 provides grants for university community service programs, college libraries, library training and research, strengthening developing institutions, teacher training programs and undergraduate instructional equipment. Authorizes insured student loans, establishes a National Teacher Corps, and provides for graduate teacher training fellowships.

National Foundation on the Arts and Humanities Act authorizes grants and loans for projects in the creative and performing arts and for research, training and scholarly publications in the humanities.

National Technical Institute for the Deaf Act provides for the establishment, construction, equipping and operation of a residential school for postsecondary education and training of the deaf.

National Vocational Student Loan Insurance Act encourages state and nonprofit private institutions and organizations to establish adequate loan insurance programs to assist students to attend postsecondary business, trade, technical and other vocational schools.

Disaster Relief Act provides funds to local education agencies to help meet exceptional costs resulting from a major disaster.

1966 *International Education Act* provides grants to institutions of higher education for centers of research and training in international studies and the international aspects of other fields of study.

National Sea Grant College and Program Act authorizes establishment and operation of seagrant colleges and programs initiating and supporting programs of education and research

in various fields relating to development of marine resources.

Adult Education Act authorizes grants to states for adult education programs, including training of teachers of adults and demonstrations in adult education (previously part of Economic Opportunity Act of 1964).

Model Secondary School for the Deaf Act authorizes establishment and operation, by Gallaudet College, of a model secondary school for the deaf.

1967 *Education Professions Development Act* amended the *Higher Education Act of 1965* to improve the quality of teaching and to help meet critical shortages of adequately trained educational personnel.

Public Broadcasting Act of 1967 establishes Corporation for Public Broadcasting to assume a major responsibility in channeling federal funds to noncommercial radio and television stations, program production groups and Educational Television networks; to conduct research, demonstration or training in matters related to noncommercial broadcasting; and to award grants for construction of educational radio and television facilities.

1968 *Elementary and Secondary Education Amendments of 1967* modifies existing programs; authorizes support of regional centers for education of handicapped children, model centers and services for deaf-blind children, recruitment of personnel and dissemination of information on education of the handicapped; technical assistance in education to rural areas; support of dropout prevention projects and support of bilingual education programs.

Handicapped Children's Early Education Assistance Act authorizes preschool and early education programs for handicapped children.

Higher Education Amendments of 1968 authorizes new programs to assist disadvantaged college students through special counseling and summer tutorial programs and programs to assist colleges to combine

resources of cooperative programs and to expand programs that provide clinical experiences for law students.

1970 *National Commission on Libraries and Information Services Act* establishes a National Commission on Libraries and Information Science to promote interlibrary services.

Office of Education Appropriation Act provides emergency funding to help schools desegregate.

Environmental Education Act establishes an Office of Environmental Education to develop curriculum and initiate and maintain environment and ecology education programs at the elementary-secondary levels and provide training programs for teachers.

Drug Abuse Education Act of 1970 provides for development, demonstration and evaluation of curricula on the problems of drug abuse.

1972 *Education Amendments of 1972* establishes the Education Division in the U.S. Department of Health, Education, and Welfare and the National Institute of Education; general aid for institutions of higher education; federal matching grants for state Student Incentive Grants; Pell Grants; a National Commission on Financing Postsecondary Education; State Advisory Councils on Community Colleges; a Bureau of Occupational and Adult Education, and state grants for postsecondary occupational education and a bureau-level Office of Indian Education. Title IX prohibits sex bias in admission to vocational, professional and graduate schools and public institutions of undergraduate higher education.

1973 *Older Americans Comprehensive Services Amendment of 1973* makes available to older citizens comprehensive programs of health, education and social services.

Comprehensive Employment and Training Act of 1973 provides for opportunities for employment and training to unemployed and underemployed persons.

1974 *Educational Amendments of 1974* establishes a National Center for Education Statistics.

Juvenile Justice and Delinquency Prevention Act of 1974 provides for technical assistance, staff training, centralized research and resources to develop and implement programs to prevent dropouts in elementary and secondary schools and establishes in the U.S. Department of Justice and a National Institute for Juvenile Justice and Delinquency Prevention.

1975 *Education for All Handicapped Act* asserts the right of all children to the best possible education in the least restrictive environment, free of charge—in effect, the right to attend conventional public schools. The act reversed the century-old practice of removing physically and mentally handicapped, unmanageable and delinquent children from their homes and communities to isolated residential facilities.

Indian Self-Determination and Education Assistance Act provides for increased participation of Indians in the establishment and conduct of their education programs and services.

Indochina Migration and Refugee Assistance Act of 1975 authorizes funds to be used for education and training of aliens who have fled from Cambodia or Vietnam. *Education for All Handicapped Act* provides that all handicapped have available to them a free appropriate education designed to meet their unique needs.

1977 *Youth Employment and Demonstration Projects Act of 1977* establishes a youth employment training program that includes, among other activities, promoting education-to-work transition, literacy training and bilingual training and attainment of certificates of high school equivalency.

1978 *Tribally Controlled Community College Assistance Act* provides federal funds for the operation and improvement of tribally controlled community colleges for Indian students.

Education Amendments of 1978 establishes a comprehensive basic skills program to improve pupil achievement (replaced National Reading Improvement Program); establishes a commu-

nity schools program to expand use of public buildings.

Middle Income Student Assistance Act modifies provisions for student financial assistance programs to allow middle-income as well as low-income students attending college or other postsecondary institutions to qualify for federal education assistance.

1979 *Department of Education Organization Act* establishes a U.S. Department of Education containing functions from the education division of the Department of Health, Education and Welfare and other selected programs from HEW, the Departments of Justice and Labor and the National Science Foundation.

1980 *Asbestos School Hazard Protection and Control Act of 1980* establishes a program for inspection of schools to detect hazardous asbestos materials and provide loans to assist educational agencies the containment or removal and replacement such materials.

1983 *Student Loan Consolidation and Technical Amendments Act of 1983* establishes an 8% interest rate for Guaranteed Student Loans and extends Family Contribution Schedule.

Education for All Handicapped Act Amendments adds Architectural Barrier Amendment and clarifies participation of handicapped children in private schools.

1984 *Education for Economic Security Act* adds new science and mathematics programs for elementary, secondary and postsecondary education. The new programs include magnet schools, excellence in education and equal access.

Carl D. Perkins Vocational Education Act replaces the *Vocational Education Act of 1963* and provides aid to states to make vocational education programs accessible to all persons, including the handicapped and disadvantaged, single parents and homemakers and the incarcerated.

1985 *Montgomery G.I. Bill—Active Duty* creates a new G.I. Bill for individuals who initially entered active military duty on or after July 1, 1985.

Montgomery G.I. Bill—Selected Reserve created a G.I. Bill for members of the Selected Reserve (which includes the National Guard) who enlist, re-enlist or extend an enlistment after June 30, 1985, for a six-year period.

1986 *Educational Amendments of 1986* fund a national testing program—the National Assessment of Educational Progress, or “Nation’s Report Card”—to measure regularly the knowledge and skills of 9-, 13- and 17-year-olds (fourth, eighth and twelfth graders) in reading, writing, mathematics, science, technology (computer competence, etc.), history, geography, literature and the arts.

1987 *McKinney-Vento Homeless Assistance Act* requires states to ensure every homeless child equal access to public school education as other children; requires public schools to eliminate all bureaucratic obstacles to such access.

1988 *Individuals with Disabilities Education Act (IDEA)* reauthorizes and renames the 1975 *Education for All Handicapped Children Act* and doubles federal funding to states and local school boards to develop and install facilities and advanced technology for educating the educationally handicapped and disabled.

The Omnibus Trade and Competitiveness Act of 1988 authorizes new and expanded education programs in literacy, math-science, foreign language, vocational training, international education and technology training.

The Omnibus Drug Abuse Prevention Act of 1988 authorizes a new teacher-training program under the *Drug-Free Schools and Communities Act*, an early childhood education program and a pilot program for the children of alcoholics.

Tax Reform Technical Amendments authorizes an issuance of tax-exempt Series EE U.S. Government Education Savings Bond for the postsecondary educational expenses.

1990 *The Excellence in Mathematics, Science and Engineering Education Act of 1990* promotes

excellence in American mathematics, science, and engineering education by creating a national mathematics and science clearinghouse and establishing regional mathematics and science education consortia and scholarship programs.

The Student Right-to-Know and Campus Security Act requires institutions of higher education receiving federal assistance to provide information on graduation rates, including those of student-athletes. The act requires institutions to certify the existence of a security policy and to submit a uniform, annual report of crime on campus to the Federal Bureau of Information for public dissemination.

The Children's Television Act of 1990 requires the Federal Communications Commission to reinstate restrictions on advertising during children's television and enforces the obligation of broadcasters to meet the educational and informational needs of the child audience.

The Americans with Disabilities Act of 1990 prohibits discrimination against persons with disabilities.

Clery Campus Security Act requires American colleges to report annually to the U.S. Department of Education all data on crimes that occurred on their campuses during the previous academic year and to make the tally available to prospective applicants for admission.

1991 *National Literacy Act* establishes the National Institute for Literacy, the National Institute Board and the Interagency Task Force on Literacy.

National Commission on a Longer School Year Act establishes the National Education Commission on Time and Learning and the National Council on Education Standards and Testing.

High-Performance Computing Act of 1991 directs the president to implement a National High-Performance Computing Program. The act provides for the establishment of a National Research and Education Network and the

development of standards and guidelines for high performance networks.

1992 *Ready-to-Learn Act* authorizes support for Ready-to-Learn television programming and support materials for preschool and elementary school children and their parents, child-care providers and educators.

1993 *Student Loan Reform Act* reforms default ridden federal student loan programs by phasing in a system of direct government lending to students and a wider variety of repayment options.

National Service Trust Act establishes a Corporation for National Service that offered education grants of up to \$4,725 a year for two years to people 17 years or older who perform community service before, during or after post-secondary education.

Goals 2000: Educate America Act establishes nationwide educational goals for the year 2000 and provides federal grants to states and local communities to reform the nation's educational system in an effort to achieve those goals. The act establishes a National Education Standards and Improvement Council to provide voluntary national certification of state and local education standards and assessments, and it establishes the National Skill Standards Board to develop voluntary national skill standards.

School-to-Work Opportunities Act provides funds to states and communities to develop programs that combine work-based and school-based learning leading to a high school diploma (or its equivalent), a nationally recognized skill certificate, an associate degree (if appropriate) and appropriate career guidance.

Safe Schools Act authorizes award of competitive grants to local educational agencies with serious crime problems to implement violence-prevention activities such as conflict resolution and peer mediation.

OERI Reauthorization authorizes the educational research and dissemination activi-

ties of the Office of Educational Research and Improvement (OERI), along with its regional educational laboratories and university-based research and development centers.

Improving America's Schools Act expands program of educational assistance to disadvantaged children and adds a safe-and-drug-free-schools provision that makes it a federal crime to sell drugs or weapons in the vicinity of any school.

1996 *Contract with America: Unfunded Mandates* restricts the right of Congress and federal

authorities to pass legislation or impose regulations on state and local governments without providing enough federal funds to ensure that local governments incur no compliance costs.

2001 *No Child Left Behind Act*, a revision and reauthorization of the Elementary and Secondary Education Act of 1965 is intended to close large, persistent educational achievement gaps between racial and ethnic groups by making every primary and secondary school student proficient in English, mathematics, science and other core subjects by the 2013–14 academic year.

APPENDIX C: SIGNIFICANT U.S. SUPREME COURT DECISIONS ON EDUCATION

Agostini v. Felton. A 1996 decision that ruled it constitutional for public school districts to send teachers to parochial schools to teach federally financed classes in special education, so long as all material remained secular.

Aguilar v. Felton. A 1985 decision that declares it unconstitutional to use public employees to provide instruction and services to students in private religious schools.

Alexander v. Holmes County Board of Education (1969). One of three U.S. Supreme Court decisions to speed the pace of desegregation and outlaw all efforts to evade it. (See also *GREEN V. COUNTY SCHOOL BOARD OF NEW KENT COUNTY* (1968) and *UNITED STATES V. MONTGOMERY COUNTY BOARD OF EDUCATION* (1969).)

Alston v. School Board of the City of Norfolk. A 1940 ruling that upholds a lower court decision that a different salary schedule for equally qualified and similarly assigned black and white teachers in Norfolk, Virginia, schools violates the due process and equal protection clauses of the Fourteenth Amendment to the Constitution. The case is the second in a 14-year series of five lawsuits sponsored by the National Association for the Advancement of Colored People (NAACP), the climax of which comes with the 1954 U.S. Supreme Court decision in *BROWN V. BOARD OF EDUCATION OF TOPEKA* declaring racial segregation in schools unconstitutional. (See also *MISSOURI EX REL GAINES V.*

CANADA [1938], *SIPUEL V. BOARD OF REGENTS OF THE UNIVERSITY OF OKLAHOMA* [1948] and *SWEATT V. PAINTER* [1950].)

Barenblatt v. United States. A 1959 decision that upholds the constitutional right of congressional committees to conduct investigations in the field of education.

Bethel School District No. 403 v. Fraser. A 1986 ruling clarifying the Court's 1969 decision in *TINKER V. DES MOINES INDEPENDENT COMMUNITY SCHOOL DISTRICT* regarding student First Amendment rights of free speech. Whereas *Tinker* gave students the right of nondisruptive political expression in school, *Bethel* upheld the right of a school to suspend a student for using obscene, sexually explicit language and gestures in a speech before the student assembly.

Board of Education of Central School District v. Allen. A 1968 decision upholding a New York State law requiring local school boards to purchase textbooks and lend them free of charge to students in private and parochial schools.

Board of Education v. Rowley. A 1982 ruling that reverses a lower court order forcing a public school to provide a free, sign-language interpreter for an 11-year-old deaf girl.

Board of Regents of State Colleges v. Roth. A 1972 ruling that a publicly employed teacher has the right to a hearing when discharged only if formal or de facto tenure has been conferred.

Board of Regents v. Southworth. A 2000 decision giving public colleges and universities the absolute prerogative to impose and collect mandatory student activity fees from all students, regardless of whether they agree or disagree with the goals of any of the student groups or activities supported by such fees.

Bob Jones University v. United States and Goldsboro Christian Schools Inc. v. United States. A landmark 1983 decision that extends the principle of racial integration to private schools by ruling that the Internal Revenue Service has the power to deny tax exemptions to private schools that practice racial discrimination.

Bradley v. Richmond School Board (1965). The last of three U.S. High Court decisions between 1963 and 1965 that effectively end resistance to school desegregation in the South. The *Bradley* decision applies all previous desegregation rulings to public school teachers as well as students. (See also *GOSS v. BOARD OF EDUCATION* (1963) and *GRIFFIN v. COUNTY SCHOOL BOARD OF PRINCE EDWARD COUNTY* (1964).

Briggs v. Elliot. One of four separate cases consolidated by the U.S. Supreme Court into the single landmark case known as *BROWN v. BOARD OF EDUCATION OF TOPEKA* in 1954.

Brown v. Board of Education of Topeka. The landmark 1954 U.S. Supreme Court decision that outlaws racial segregation in American public schools and signals the end to racial segregation in all public facilities in the United States. The decision was a consolidation of four separate cases, including *BRIGGS v. ELLIOT*, *Gebbart v. Belton* and *DAVIS v. COUNTY SCHOOL BOARD*.

Camer v. Eikenberry. A 1983 ruling in which the High Court refuses to review a lower court decision that a public school has the legal right to establish minimum academic standards for entry into special programs such as honors programs and to bar unqualified students.

Charles E. Stuart and Others v. School District No. 1 of the Village of Kalamazoo and Others. A precedent-setting case in 1874 that establishes the right of town officials to raise taxes to pay for a public high school.

Cleveland Board of Education v. LaFleur. A 1974 decision that the Cleveland Board of Education violated the Constitutional rights of women by requiring pregnant teachers to take unpaid maternity leave several months before and after childbirth.

Committee for Public Education and Religious Freedom v. Regan. A 1980 decision that New York State can reimburse private and parochial schools for the costs of state-mandated testing and other activities.

Committee for Public Education v. Nyquist. A 1973 decision that ruled a New York State law unconstitutional for providing a tax deduction for tuition paid to private schools. The Court ruled that the law had not been neutral and provided parents of students attending religious schools a benefit not available to parents of public school students.

Cooper v. Aaron. A 1958 decision that denies a school board the right to delay racial integration of public schools.

Cramp v. Board of Public Instruction of Orange County, Florida. A 1961 decision that declares a Florida loyalty oath unconstitutional.

Davis v. County School Board. One of four cases in Kansas, South Carolina, Virginia and Delaware that the High Court consolidated into the landmark school desegregation decision *BROWN v. BOARD OF EDUCATION OF TOPEKA* (1954).

Edwards v. Aguillard. A 1987 decision that declared unconstitutional a Louisiana law that prohibited the teaching of the theory of evolution in public schools unless "creation science" was taught at the same time.

Engel v. Vitale. A 1962 decision declaring as unconstitutional a New York State law giving public school officials the option to mandate a daily nondenominational prayer in school.

Epperson v. Arkansas. A unanimous 1968 decision declaring a 1928 Arkansas law unconstitutional for permitting the teaching of the Biblical story of human's creation while banning the teaching of any theory that "mankind ascended or descended from a lower order of animals."

Everson v. Board of Education. A landmark 1946 ruling that it is not a violation of the establishment clause of the First Amendment to reimburse parents of parochial, as well as private school children for school bus costs.

Goss v. Board of Education (1963). The first of three Supreme Court decisions between 1963 and 1965 that effectively ends resistance to school desegregation in the South. *Goss* strikes down a Tennessee law intended to obstruct the progress of desegregation by allowing students to transfer from schools where their race is a minority into schools where their race is a majority. (See also *BRADLEY V. RICHMOND SCHOOL BOARD* [1965] and *GRIFFIN V. COUNTY SCHOOL BOARD OF PRINCE EDWARD COUNTY* [1964].)

Goss v. Lopez. A 1975 decision reaffirming a lower court affirmation of a public school student's constitutional right, under the Fourteenth Amendment, to due process in school disciplinary actions.

Gratz v. Bollinger. A 2003 decision banning the University of Michigan's use of a "point system" that gave disproportionate consideration to race in college applications over other elements such as SAT scores, high school grades and so forth. Although the court did not disallow consideration of race, it banned giving it more weight than any other "personal characteristics."

Green v. County School Board of New Kent County. A 1968 decision that strikes down a desegregation plan allowing black and white

students in New Kent County to choose whether or not they wanted to attend formerly all-black or all-white schools.

Griffin v. County School Board of Prince Edward County. A landmark decision affirming the right of federal courts to levy taxes and raise funds to reopen public schools when local school boards fail to do so.

Grutter v. Bollinger. A 2003 decision upholding the principle of affirmative action in the University of Michigan Law School admissions process. The suit sought to force the law school to evaluate applicants on a race-blind basis, but the Court upheld the right of the school to take race into consideration as long as it did not weigh more heavily than other "personal characteristics" such as being a class officer or team captain, for example.

Hazelwood School District v. Kuhlmeier. A 1988 decision that gave a high school principal the right to delete from the student newspaper student articles he deems inappropriate.

Healy v. James. A unanimous 1972 ruling that a college could not prevent students from forming a chapter of the Students for a Democratic Society or deny students the use of campus facilities without evidence that they intended to disrupt the local campus.

Ingraham v. Wright. A 1977 ruling that spanking by school authorities does not violate the constitutional rights of students.

Irving School District v. Tatro. A 1984 decision that public school districts are obligated by the Education for All Handicapped Children Act of 1975 to render quasi-medical services to handicapped students.

Keyes v. School District No. 1. A landmark 1973 decision that orders the Denver, Colorado, school board to desegregate its entire school system "root and branch," using every possible device, including system-wide busing to redistribute Mexican, black and white pupils

and affect "the greatest possible degree of actual desegregation." The decision is the first ever to deal with segregation in a "northern" city and the first involving an ethnic group. The decision extends the desegregation doctrine beyond race to every class of Americans.

Lau v. Nichols. A far-reaching 1974 decision that extends the obligations of American public schools to educate *all* children residing in the United States, including non-English-speaking, foreign-born children. The court holds that public schools must, if necessary, teach such children in their native languages.

Lee v. Weisman. A 1992 ruling that prayer at a school graduation is unconstitutional, calling it "pervasive" government involvement in religious activity that left students little choice but to participate.

Lemon v. Kurtzman. A 1971 U.S. Supreme Court decision that declares direct state support of parochial schools an unconstitutional violation of the establishment clause of the First Amendment, which bans state support of any religion.

McCarthy v. Philadelphia Civil Service Commission. A 1976 ruling that upholds as constitutional Philadelphia's ordinance requiring city employees, such as teachers, to live within the city limits.

McCullum v. Board of Education. A 1948 ruling that orders the public schools of Champaign, Illinois, to cease the practice of releasing students for religious instruction by visiting clerics on school grounds.

Meek v. Pittinger. A 1975 decision that strikes down as unconstitutional a Pennsylvania law under which parochial and private schools were provided with loans of state-owned maps, projectors, films and other public school equipment, as well as with public school teachers for remedial and special learning courses.

Meredith v. Jefferson County Board of Education. A 2006 case in which a parent challenged the use of race in assigning students to high schools in Jefferson County, which includes the city of Louisville. The county board of education had been attempting to maintain black enrollment of no less than 15% and no more than 50% at every high school levels between.

Milliken v. Bradley. A controversial 1974 decision that effectively ends busing between independent school districts achieve racial segregation.

Mills v. District of Columbia Board of Education. A landmark 1972 class-action suit that establishes the constitutional right of handicapped children to free, public school education. *Mills* opens the way towards the establishment of zero-rejection policies of American public schools.

Minnesota Board for Community Colleges v. Knight. A 1984 ruling giving the state the right to certify a single organization as the representative of college faculties in state schools and bar nonmembers of such organizations from policy discussions.

Missouri ex rel. Gaines v. Canada. A 1938 decision that holds the state in violation of the Constitution by depriving its black citizens of the right to legal education and, therefore, the constitutional right to charge others and defend themselves in court. The case is the first in a series of six decisions over 16 years that culminated in 1954 with *BROWN v. BOARD OF EDUCATION OF TOPEKA*, which ended racial segregation of public schools in the United States. (See also *ALSTON v. SCHOOL BOARD OF THE CITY OF NORFOLK* [1940], *McLaurin v. Oklahoma State Regents*, *SIPUEL v. BOARD OF REGENTS OF THE UNIVERSITY OF OKLAHOMA* and *SWEATT v. PAINTER* [1950].)

Mitchell v. Helms. A U.S. Supreme Court ruling in 2000 that a federal program that placed computers and other "instructional equip-

ment" in religious school classrooms did not violate the establishment clause of the First Amendment, mandating constitutional separation of church and state.

Mueller v. Allen. A 1983 decision upholding the constitutionality of a Minnesota law that granted parents limited tax deductions for certain costs of secular education and educational services provided by private and parochial schools.

National Collegiate Athletic Association v. University of Oklahoma. A 1984 ruling that the National Collegiate Athletic Association (NCAA) violated federal antitrust law by preventing individual colleges and universities from negotiating the rights to football telecasts.

National Labor Relations Board v. Catholic Bishop of Chicago. A 1974 ruling that the National Labor Relations Board lacks the power to intervene in disputes between parochial schools that had refused to bargain with lay faculty unions.

National Labor Relations Board v. Yeshiva University and Yeshiva University Faculty Association v. Yeshiva University. A 1980 ruling that most faculty unions at private colleges and universities are not protected by federal labor law.

New Jersey v. T.L.O. A 1985 decision ruling it legally permissible for public school officials and teachers to search a student's property as long as the scope of the search is proper and there are "reasonable grounds" to believe the search will yield evidence of a violation of the law or school rules.

North Haven Board of Education v. Bell. A 1982 decision that extends the reach of a law prohibiting gender discrimination in federally funded education programs to school and college employees, as well as students.

Parents Involved in Community Schools v. Seattle School District No. 1. A case in which parents have challenged the use of race in assigning some children to Seattle high schools. Children

may select any of Seattle's 10 high schools, but if the student's first choice is oversubscribed, the school district assigns the student to a lower choice school, using a number of factors, including the student's effect on the school's racial balance.

Pennsylvania Association for Retarded Children v. Commonwealth of Pennsylvania (PARC decision). A landmark 1971 case that extends universal public education laws to retarded children as a Constitutional right.

Pickering v. Board of Education of Township High School. A 1968 decision that public school teachers cannot be dismissed for publicly criticizing school systems, even if some of the charges were wrong.

Pierce v. Society of Sisters. A unanimous 1925 decision that a 1922 Oregon law requiring children to attend public rather than private schools is unconstitutional.

Plessy v. Ferguson. An 1896 decision that holds separate-but-equal public facilities for different racial groups constitutional.

Plyler v. Doe. An historic 1982 ruling that public schools are constitutionally obliged to admit children of illegal aliens and provide them with tuition-free public education. It is the first time the court extends Constitutional protection to persons who are not U.S. citizens.

Rumsfeld v. Forum for Academic and Institutional Rights (FAIR). A unanimous 2006 ruling that 38 law schools could not bar military recruiters from their campuses while permitting free access to corporate and other recruiters. The Court upheld the constitutionality of a federal law, the Solomon Amendment, that withholds federal grants from colleges and universities that do not permit military recruiters on campus "in a manner at least equal in quality and scope" to civilian recruiters.

San Antonio School District v. Rodriguez. A 1974 decision upholding the right of states to

finance public school systems with local property taxes. The decision is a setback for representatives of minority groups and the poor who contend that tax-based public-school funding leads to inequitable spending on education.

Santa Fe Independent School District v. Doe. A 2000 ruling by the United States Supreme Court that student-led prayers at high school football games—and by implication other athletic contests, school events and school-sponsored extracurricular activities—are unconstitutional.

Schall v. Martin. A significant but little known 1984 decision in which the court holds it constitutional for states to hold juvenile criminal suspects in preventive detention before bringing them to trial.

School District of Abington Township v. Schempp. A 1963 decision that declares prayers and Bible readings in public schools unconstitutional—even when unwilling students are excused from such activities. The decision was a reaffirmation of the Supreme Court's ruling in *Engel v. Vitale* the previous year.

School District of the City of Grand Rapids v. Ball. A 1985 decision that declares it unconstitutional to pay public school teachers from public funds to teach special programs in religious schools—even when the programs, such as remedial reading, are nonreligious.

Shelton v. Tucker. A 1960 decision declaring unconstitutional a 1958 Arkansas law requiring teachers to list all organizations to which they belonged in the previous five years.

Sipuel v. Board of Regents of the University of Oklahoma. A 1948 ruling that the state must provide opportunities for legal education for blacks and must do so for one race as soon as for the other. *Sipuel* is one of a series of cases from 1938 to 1954 that culminates in 1954 with *BROWN V. BOARD OF EDUCATION OF TOPEKA*, which ends racial segregation of public schools in the United States. (See also *ALSTON V. SCHOOL*

BOARD OF THE CITY OF NORFOLK [1940], *MISSOURI EX REL GAINES V. CANADA* [1938] and *SWEATT V. PAINTER* [1950].)

Southeastern Community College v. Davis. A unanimous 1979 decision that federally funded colleges are not required to admit all handicapped applicants or to make “extensive modifications” of their facilities to accommodate disabled students.

Swann v. Charlotte-Mecklenburg Board of Education. A landmark decision in 1971 that requires a North Carolina school board to bus students across district lines to achieve racial integration in public schools.

Sweatt v. Painter. A 1950 ruling that leaves standing a previous High Court decision ordering all-white University of Texas Law School to admit Herman Marion Sweatt, a Negro. Together with *ALSTON V. SCHOOL BOARD OF THE CITY OF NORFOLK* (1940), and *MISSOURI EX REL GAINES V. CANADA* (1938) and *SIPUEL V. BOARD OF REGENTS OF THE UNIVERSITY OF OKLAHOMA* (1948), *Sweatt* is one of a carefully planned series of lawsuits that reach a climax in 1954 in *BROWN V. BOARD OF EDUCATION OF TOPEKA*, in which the Supreme Court declares racial segregation of public schools unconstitutional.

Tinker v. Des Moines Independent Community School District. A 1969 ruling that public school officials cannot arbitrarily deprive students of their First Amendment rights to non-disruptive free speech.

Trustees of Dartmouth College v. Woodward. A still-controversial 1819 decision that holds charters—even those granted by the British king before U.S. independence—to be binding contracts protected by the Constitution.

United States v. Montgomery County Board of Education. A decision in 1969 establishing racial ratios for teacher assignments in Montgomery, Alabama, public schools. The case is significant in that it effectively ends the mas-

sive resistance of states in the South to the 1954 decision in *BROWN v. BOARD OF EDUCATION OF TOPEKA* declaring racial segregation of public schools unconstitutional.

University of California Regents v. Bakke. A 1978 decision that upholds the claim of “reverse discrimination” by a white student who charged that the University of California Medical School rejected him because of his race.

Vernonia School District 47J v. Acton. A 1995 decision upholding a school’s right to require urinalysis and other unobtrusive drug tests as a condition for participating in interscholastic athletics.

Wallace v. Jaffree. A 1985 decision that declares unconstitutional an Alabama law authorizing a daily, one-minute period of silence in public schools “for meditation or voluntary prayer.”

Waters v. Churchill. A 1994 ruling that public employers have the right to dismiss employees whose speech, while constitutionally guaranteed, might disrupt normal operations in the workplace.

Widmar v. Vincent. A ruling in 1981 affirming the constitutional right of student organizations at public colleges and universities to hold religious services on campus property.

Wisconsin v. Yoder. A 1972 ruling that gives the Amish religious sect a rare exemption from state compulsory educational laws. The High

Court holds that 300 years of unswerving dedication to their way of life entitled the Amish to be exempt from Wisconsin’s (and, by extension, to every other state’s) law requiring children to attend school until age 16.

Wolman v. Walter. A 1977 decision that upholds the constitutionality of an Ohio law authorizing various forms of state aid to private schools.

Wood v. Strickland. A 1975 ruling that holds a school board member liable for damages for violating the constitutional rights of students.

Wygant v. Jackson Board of Education. A 1986 ruling that, in an effort to cut costs, a school board cannot preserve the jobs of black teachers by laying off white teachers.

Zelman v. Simmons-Harris. A 2002 U.S. Supreme Court decision that the SCHOOL VOUCHER program in Cleveland, Ohio, was constitutional. The Court declared that any program that allows parents to use school vouchers to pay for religious school tuition for their children was constitutional as long as the state and school district remained “neutral” with respect to religion and broadened the choice of schools for children in districts with only failing public schools.

Zorach v. Clauson. A 1952 decision that upholds a New York law permitting public schools to release students to attend religious instruction that takes place outside public school and does not require public financial support.

APPENDIX D: GRADUATE SCHOOL OFFERINGS IN EDUCATION, UNDERGRADUATE EDUCATION MAJORS AND UNDERGRADUATE MAJORS AT AMERICAN COLLEGES

Graduate School Offerings in Education

At the graduate-school level, more than 500 universities offer master's and doctoral programs in administration and supervision, curriculum and instruction, elementary and secondary teaching, evaluation and research, foundations of education, guidance and counseling, health/physical education, history and philosophy of education, reading specialist, recreation, school psychology, special education, speech pathology and audiology, vocational distributive occupational education, early childhood education, extension education and student personnel services.

Somewhat fewer graduate schools offer specialized post-college training and degrees in adult and community education, audio-visual education, community college teaching, computers in education, education of the gifted, (teaching) English as a second language, learning disabilities, marriage and family counseling, recreation administration, safety education, school librarianship, sex education, teaching the culturally disadvantaged, teaching the emotionally disturbed, teaching the mentally retarded, teaching the physically handicapped and urban education.

Undergraduate Majors and Courses of Study in Education

Agricultural education, art education, bilingual/bicultural education, business education, Christian education, computer education, curriculum and instruction, drama education, safety education, early childhood education, education, education of the deaf and hearing impaired, education of the emotionally handicapped, education of the exceptional child, education of the mentally handicapped, education of the multiple-handicapped, education of the physically handicapped, education of the visually handicapped, educational media, educational statistics and research, elementary education, English education, environmental education, foreign languages education, guidance education, health education, home economics education, industrial arts education, journalism education, marketing and distribution education, mathematics education, middle school education, music education, nursing education, nutrition education, physical education, psychology education, reading education, recreation education, religious education, science education, secondary education, social science education, social studies education, special education, teaching English as a second language or as a foreign language, technical

education, trade and industrial education and vocational education.

Undergraduate Majors Offered at American Colleges

In the last century, American colleges and universities have constantly expanded their curricula to meet the changing practical and social needs of their student constituencies. Those changes have seen curricula explode from a small selection of several dozen classical arts and science courses into a cafeteria of several thousand courses grouped into more than 100 majors, ranging from accounting to zoology. Here are the majors listed at more than 1,500 accredited four-year colleges and universities at the beginning of the 21st century. Several annual college directories available at libraries and bookstores cross-reference each of the majors with the multitude of colleges that offer them. Listed among the following majors are educational majors, which have also been listed earlier, with a list of graduate-school offerings in education.

Accounting, actuarial science studies, advertising, aeronautical engineering, aeronautical science, aeronautical technology, aerospace studies, African languages, African studies, African-American studies, agricultural business management, agricultural economics, agricultural education, agricultural engineering, agricultural engineering technology, agricultural mechanics, agriculture, agronomy, air traffic control, aircraft mechanics, airline piloting and navigation, allied health, American Indian studies, American literature, American studies, anatomy, animal science, anthropology, apparel and accessories, apparel design, applied art, applied mathematics, applied music, applied physics, Arabic, archeology, architectural engineering, architectural technology, architecture,

area studies, art, art education, art history and appreciation, art therapy, arts administration and management, Asian-American studies, Asian-Oriental studies, astronomy, astrophysics, athletic training, atmospheric sciences and meteorology, audio technology, automotive technology, avian sciences, aviation administration and management, aviation computer technology.

Bacteriology, banking and finance, behavioral science, biblical languages, biblical studies, bilingual/bicultural education, biochemistry, bioengineering, biology and biological science, biomedical engineering, biomedical equipment technology, biomedical science, biometrics and biostatics, biophysics, biotechnology, botany, broadcasting, business administration and management, business data processing, business economics, business education, business law, business statistics, business systems analysis.

Canadian studies, Caribbean studies, cartography, cell biology, Celtic studies, ceramic art and design, ceramic engineering, ceramic science, chemical engineering, chemical engineering technology, chemical technology, chemistry, child care and child-family studies, child psychology and development, Chinese, chiropractic, Christian education, Christian studies, city/community/regional planning, civil engineering, civil engineering technology, classical and ancient civilizations, classical languages, classics, clinical psychology, clinical science, clothing and textiles management/production/services, cognitive science, commercial art, communications, communications technology, community health work, community psychology, community services, comparative literature, computer education, computer engineering, computer graphics, computer management, computer mathematics, computer programming, computer science, computer technology,

conservation and regulation, consumer services, construction engineering, construction management, construction technology, corrections, counseling psychology, court reporting, crafts, creative writing, criminal justice, criminology, cross-cultural studies, curriculum and instruction, cybernetics, cytotechnology.

Dairy science, dance, dance education, dance therapy, data processing, dental hygiene, dental laboratories technology, design, developmental psychology, dietetics, drafting and design, drafting and design technology, drama education, dramatic arts, drawing, driver and safety education, Dutch.

Early childhood education, early childhood studies, earth science, East Asian languages and literature, East Asian studies, Eastern European studies, ecology, economics, education, education of the deaf and hearing impaired, education of the emotionally handicapped, education of the exceptional child, education of the mentally handicapped, education of the multiple-handicapped, education of the physically handicapped, education of the visually handicapped, educational media, educational statistics and research, electrical and electronics engineering, electrical and electronics engineering technology, electromechanical technology, electron physics, elementary education, elementary particles physics, emergency-disaster science, emergency medical technologies, energy management technology, engineering, engineering and applied science, engineering management, engineering mechanics, engineering physics, engineering technology, English, (teaching) English as a second or foreign language, English education, English literature, entomology, entrepreneurial studies, environmental biology, environmental design, environmental education, environmental engineering, environmental engineering technology, environmental health science, environmental science, equine science, Eskimo,

ethics of politics and social policy, ethnic studies, European studies, evolutionary biology, experimental psychology.

Family and community services, family and consumer resource management, family and consumer studies, fashion design and technology, fashion merchandising, fiber and textiles weaving, film arts, fine arts, fire control and safety technology, fire protection, fire protection engineering, fire science, fish and game management, fishing and fisheries, fluid and thermal science, folklore and mythology, food production and management services, food science, food services technology, foreign languages education, forensic studies, forest engineering, forestry production and processing, forestry and related services, French, French language and literature, French studies, funeral home services, furniture design.

Genetics, geochemistry, geodetic science, geography, geological engineering, geology, geophysical engineering, geophysics and seismology, geoscience, German, German area studies, German languages and literature, gerontology, glass, graphic arts technology, graphic design, graphic and printing production, Greek (classical), Greek (modern), Greek studies, guidance education, guitar.

Hawaiian, Hawaiian studies, health, health care administration, health education, health science, Hebrew, Hispanic-American studies, historic preservation, history, history of philosophy, history of science, home economics home economics education, home furnishings and equipment management and production services, horticulture, hospice care, hospital administration, hospitality management service, hotel/motel and restaurant management, human development, human ecology, human resources, human services, humanities, humanities and social science, hydrology.

Illustration, Indic languages, industrial administration and management, industrial arts education, industrial design, industrial and organizational psychology, industrial engineering technology, industrial hygiene, information sciences and systems, institutional management, insurance, insurance and risk management, interdisciplinary studies, interior design, international agriculture, international business management, international economics, international public service, international relations, international studies, interpreter for the deaf, investments and securities, Islamic studies, Italian, Italian studies.

Japanese, jazz, journalism, journalism education, Judaic studies.

Korean.

Labor studies, landscape architecture and design, land use management and reclamation, languages, laser electro-optics technology, Latin, Latin American studies, law, law enforcement and corrections, liberal arts/general studies, library science, life science, linguistics, literature, Luso-Brazilian studies.

Management engineering, management information systems, management science, manufacturing engineering, manufacturing technology, marine biology, marine engineering, marine science, maritime science, marketing and distribution, marketing and distribution education, marketing management, marketing/retailing/merchandising, materials engineering, materials science, mathematics, mathematics education, mechanical design technology, mechanical engineering, mechanical engineering technology, media arts, medical laboratory science, medical laboratory technology, medical records administration and services, medical technology, medical science, medieval studies, mental health and human services, metal/

jewelry, metallurgical engineering, metallurgy, Mexican-American/Chicano studies, microbiology, Middle Eastern studies, middle school education, military science, mining and mineral engineering, mining and petroleum technology, ministries, missions, modern languages, molecular biology, museum studies, music, music business management, music education, music history and appreciation, music performance, music theory and composition, music therapy, musical theater.

Native American studies, natural resource management, natural sciences, naval architecture and marine engineering, naval science, Near Eastern studies, neuroscience, nuclear engineering, nuclear engineering technology, nuclear medical technology, nuclear technology, nursing, nursing education, nutrition, nutrition education.

Occupational safety and health, occupational therapy, ocean engineering, oceanography, office supervision and management, opera, operations research, optical engineering, optics, optometry, organizational behavior.

Pacific area studies, painting, paleontology, paper and pulp science, paper engineering, paralegal studies, parks and recreation management, pastoral studies, peace studies, percussion, performing arts, personnel management, petroleum and natural gas engineering, pharmacy, philosophy, photography, physical chemistry, physical education, physical fitness and movement, physical sciences, physical therapy, physician's assistant, physics, physiology, piano and organ, planetary and space science, plant genetics, plant pathology, plant physiology, plant protection and pest management, plant science, plastics engineering, plastics technology, Polish, political science and government, polymer science, Portuguese, poultry science, predentistry, preengineering, prelaw, premedi-

cine, preoptometry, preosteopathy, prepharmacy, prepodiatry, preveterinary science, printmaking, printing technology, psychobiology, psychology, psychology education, public administration, public affairs, public health, public relations, publishing, purchasing and inventory management.

Quantitative methods.

Radiation therapy, radio and television technology, radiographic medical technology, radiological science, radiological technology, range and farm management, reading education, real estate, recreation and leisure services, recreational facilities management, recreation education, recreation therapy, rehabilitation therapy, religion, religious education, religious music, respiratory therapy, retailing, Romance languages, rural economics, rural sociology, Russian, Russian and Slavic studies.

Safety and security technology, safety management, Sanskrit and Indian studies, Scandinavian languages, Scandinavian studies, school psychology, science, science and management, science education, science technology, sculpture, secondary education, secretarial studies and office management, Slavic languages, small business management, social foundations, social psychology, social science, social science education, social studies, social studies education, social work, sociology, soil science, South Asian studies, Southwest American studies, Spanish, Spanish studies, special education, specific learning

disabilities, speech correction, speech/debate/rhetoric, speech pathology and audiology, speech therapy, sports management, sports medicine, statistics, strings, studio art, survey and mapping technology, surveying engineering, systems analysis, systems engineering, systems science.

Teaching English as a second language or as a foreign language, technical and business writing, technical education, technological management, technology and public affairs, telecommunication, textile engineering, textile technology, textiles and clothing, theater design, theater management, theological studies, third world studies, tourism, toxicology, toy design, trade and industrial education, transportation and travel marketing, transportation engineering, transportation management, transportation technology.

Ultrasound technology, urban design, urban planning technology, urban studies.

Veterinary science, video, visual and performing arts, vocational education, voice.

Water resources, water and wastewater technology, welding engineering, western European studies, western civilization and culture, wildlife biology, wildlife management, winds, women's studies, wood science, woodworking.

Yiddish, youth ministry.

Zoology.

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