

# History of Education

## I INTRODUCTION

History of Education, theories, methods, and administration of schools and other agencies of information from ancient times to the present. Education developed from the human struggle for survival and enlightenment. It may be formal or informal. Informal education refers to the general social process by which human beings acquire the knowledge and skills needed to function in their culture. Formal education refers to the process by which teachers instruct students in courses of study within institutions.

## II EDUCATION IN PRELITERATE SOCIETIES

Before the invention of reading and writing, people lived in an environment in which they struggled to survive against natural forces, animals, and other humans. To survive, preliterate people developed skills that grew into cultural and educational patterns. For a particular group's culture to continue into the future, people had to transmit it, or pass it on, from adults to children. The earliest educational processes involved sharing information about gathering food and providing shelter; making weapons and other tools; learning language; and acquiring the values, behavior, and religious rites or practices of a given culture.

Through direct, informal education, parents, elders, and priests taught children the skills and roles they would need as adults. These lessons eventually formed the moral codes that governed behavior. Since they lived before the invention of writing, preliterate people used an oral tradition, or story telling, to pass on their culture and history from one generation to the next. By using language, people learned to create and use symbols, words, or signs to express their ideas. When these symbols grew into pictographs and letters, human beings created a written language and made the great cultural leap to literacy.

## III EDUCATION IN ANCIENT AFRICA AND ASIA

In ancient Egypt, which flourished from about 3000 BC to about 500 BC, priests in temple schools taught not only religion but also the principles of writing, the sciences, mathematics, and architecture. Similarly in India, priests conducted most of the formal education. Beginning in about 1200 BC Indian priests taught the principles of the Veda, the sacred texts of Hinduism, as well as science, grammar, and philosophy. Formal education in China dates to about 2000 BC, though it thrived particularly during the Eastern Zhou Dynasty, from 770 to 256 BC (see China: The Eastern Zhou). The curriculum stressed philosophy, poetry, and religion, in accord with the teachings of Confucius, Laozi (Lao-tzu), and other philosophers.

## IV EDUCATION IN ANCIENT GREECE

Historians have looked to ancient Greece as one of the origins of Western formal education. The *Iliad* and the *Odyssey*, epic poems attributed to Homer and written sometime in the 8th century BC, created a cultural tradition that gave the Greeks a sense of group identity. In their dramatic account of Greek struggles, Homer's epics served important educational purposes. The legendary Greek warriors depicted in Homer's work, such as Agamemnon, Odysseus, and Achilles, were heroes who served as models for the young Greeks.

Ancient Greece was divided into small and often competing city-states, or poleis, such as Athens, Sparta, and Thebes. Athens emphasized a humane and democratic society and education, but only about one-third of the people in Athens were free citizens. Slaves and residents from other countries or city-states made up the rest of the population. Only the sons of free citizens attended school. The Athenians believed a free man should have a liberal education in order to perform his civic duties and for his own personal development. The education of women depended upon the customs of the particular Greek city-state. In Athens, where women had no legal or economic rights, most women did not attend school. Some girls, however, were educated at home by tutors. Slaves and other noncitizens had either no formal education or very little. Sparta, the chief political enemy of Athens, was a dictatorship that used education for military training and drill. In contrast to Athens, Spartan girls received more schooling but it was almost exclusively athletic training to prepare them to be healthy mothers of future Spartan soldiers.

In the 400s BC, the Sophists, a group of wandering teachers, began to teach in Athens. The Sophists claimed that they could teach any subject or skill to anyone who wished to learn it. They specialized in teaching grammar, logic, and rhetoric, subjects that eventually formed the core of the liberal arts. The Sophists were more interested in preparing their students to argue persuasively and win arguments than in teaching principles of truth and morality.

Unlike the Sophists, the Greek philosopher Socrates sought to discover and teach universal principles of truth, beauty, and goodness. Socrates, who died in 399 BC, claimed that true knowledge existed within everyone and needed to be brought to consciousness. His educational method, called the Socratic method, consisted of asking probing questions that forced his students to think deeply about the meaning of life, truth, and justice.

In 387 BC Plato, who had studied under Socrates, established a school in Athens called the Academy. Plato believed in an unchanging world of perfect ideas or universal concepts. He asserted that since true knowledge is the same in every place at every time, education, like truth, should be unchanging. Plato described his educational ideal in the *Republic*, one of the most notable works of Western philosophy. Plato's *Republic* describes a model society, or republic, ruled by highly intelligent philosopher-kings. Warriors make up the republic's second class of people. The lowest class, the workers, provide food and the other products for all the people of the republic. In Plato's ideal educational system, each class would receive a different kind of instruction to prepare for their various roles in society.

In 335 BC Plato's student, Aristotle, founded his own school in Athens called the Lyceum. Believing that human beings are essentially rational, Aristotle thought people could discover natural laws that governed the universe and then follow these laws in their lives. He also concluded that educated people who used reason to make decisions would lead a life of moderation in which they avoided dangerous extremes.

In the 4th century BC Greek orator Isocrates developed a method of education designed to prepare students to be competent orators who could serve as government officials. Isocrates's students studied rhetoric, politics, ethics, and history. They examined model orations and practiced public speaking. Isocrates's methods of education directly influenced such Roman educational theorists as Cicero and Quintilian.

## V EDUCATION IN ANCIENT ROME

While the Greeks were developing their civilization in the areas surrounding the eastern Mediterranean Sea, the Romans were gaining control of the Italian peninsula and areas of the western Mediterranean. The Greeks' education focused on the study of philosophy. The Romans, on the other hand, were preoccupied with war, conquest, politics, and civil administration. As in Greece, only a minority of Romans attended school. Schooling was for those who had the money to pay tuition and the time to attend classes. While girls from wealthy families occasionally learned to read and write at home, boys attended a primary school, called *aludus*. In secondary schools boys studied Latin and Greek grammar taught by Greek slaves, called *pedagogues*.

After primary and secondary school, wealthy young men often attended schools of rhetoric or oratory that prepared them to be leaders in government and administration. Cicero, a 1st century BC Roman senator, combined Greek and Roman ideas on how to educate orators in his book *De Oratore*. Like Isocrates, Cicero believed orators should be educated in liberal arts subjects such as grammar, rhetoric, logic, mathematics, and astronomy. He also asserted that they should study ethics, military science, natural science, geography, history, and law.

Quintilian, an influential Roman educator who lived in the 1st century AD, wrote that education should be based on the stages of individual development from childhood to adulthood. Quintilian devised specific lessons for each stage. He also advised teachers to make their lessons suited to the student's readiness and ability to learn new material. He urged teachers to motivate students by making learning interesting and attractive.

## VI ANCIENT JEWISH EDUCATION

Education among the Jewish people also had a profound influence on Western learning. The ancient Jews had great respect for the printed word and believed that God revealed truth to them in the Bible. Most information on ancient Jewish goals and methods of education comes from the Bible and the Talmud, a book of religious and civil law. Jewish religious leaders, known as rabbis, advised parents to teach their children religious beliefs, law, ethical practices, and vocational skills. Both boys and girls were introduced to religion by studying the Torah, the most sacred document of Judaism. Rabbis taught in schools within synagogues, places of worship and religious study.

## VII MEDIEVAL EDUCATION

During the Middle Ages, or the medieval period, which lasted roughly from the 5th to the 15th century, Western society and education were heavily shaped by Christianity, particularly the Roman Catholic Church. The Church operated parish, chapel, and monastery schools at the elementary level. Schools in monasteries and cathedrals offered secondary education. Much of the teaching in these schools was directed at learning Latin, the old Roman language used by the church in its ceremonies and teachings. The church provided some limited opportunities for the education of women in religious communities or convents. Convents had libraries and schools to help prepare nuns to follow the religious rules of their communities. Merchant and craft guilds also maintained some schools that provided basic education and training in specific crafts. Knights received training in military tactics and the code of chivalry.

As in the Greek and Roman eras, only a minority of people went to school during the medieval period. Schools were attended primarily by persons planning to enter religious life such as priests, monks, or

nuns. The vast majority of people were serfs who served as agricultural workers on the estates of feudal lords. The serfs, who did not attend school, were generally illiterate (see Serfdom).

In the 10th and early 11th centuries, Arabic learning had a pronounced influence on Western education. From contact with Arab scholars in North Africa and Spain, Western educators learned new ways of thinking about mathematics, natural science, medicine, and philosophy. The Arabic number system was especially important, and became the foundation of Western arithmetic. Arab scholars also preserved and translated into Arabic the works of such influential Greek scholars as Aristotle, Euclid, Galen, and Ptolemy. Because many of these works had disappeared from Europe by the Middle Ages, they might have been lost forever if Arab scholars such as Avicenna and Averroës had not preserved them.

In the 11th century medieval scholars developed Scholasticism, a philosophical and educational movement that used both human reason and revelations from the Bible. Upon encountering the works of Aristotle and other Greek philosophers from Arab scholars, the Scholastics attempted to reconcile Christian theology with Greek philosophy. Scholasticism reached its high point in the *Summa Theologiae* of Saint Thomas Aquinas, a 13th century Dominican theologian who taught at the University of Paris. Aquinas reconciled the authority of religious faith, represented by the Scriptures, with Greek reason, represented by Aristotle. Aquinas described the teacher's vocation as one that combines faith, love, and learning.

The work of Aquinas and other Scholastics took place in the medieval institutions of higher education, the universities. The famous European universities of Paris, Salerno, Bologna, Oxford, Cambridge, and Padua grew out of the Scholastics-led intellectual revival of the 12th and 13th centuries. The name *university* comes from the Latin word *universitas*, or associations, in reference to the associations that students and teachers organized to discuss academic issues. Medieval universities offered degrees in the liberal arts and in professional studies such as theology, law, and medicine.

## VIII EDUCATION DURING THE RENAISSANCE

The Renaissance, or rebirth of learning, began in Europe in the 14th century and reached its height in the 15th century. Scholars became more interested in the humanist features—that is, the secular or worldly rather than the religious aspects—of the Greek and Latin classics. Humanist educators found their models of literary style in the classics. The Renaissance was a particularly powerful force in Italy, most notably in art, literature, and architecture. In literature, the works of such Italian writers as Dante Aleghieri, Petrarch, and Giovanni Boccaccio became especially important.

Humanist educators designed teaching methods to prepare well-rounded, liberally educated persons. Dutch humanist Desiderius Erasmus was particularly influential. Erasmus believed that understanding and conversing about the meaning of literature was more important than memorizing it, as had been required at many of the medieval religious schools. He advised teachers to study such fields as archaeology, astronomy, mythology, history, and Scripture.

The invention of the printing press in the mid-15th century made books more widely available and increased literacy rates (see Printing). But school attendance did not increase greatly during the Renaissance. Elementary schools educated middle-class children while lower-class children received little, if any, formal schooling. Children of the nobility and upper classes attended humanist secondary schools.

Educational opportunities for women improved slightly during the Renaissance, especially for the upper classes. Some girls from wealthy families attended schools of the royal court or received private lessons at home. The curriculum studied by young women was still based on the belief that only certain subjects, such as art, music, needlework, dancing, and poetry, were suited for females. For working-class girls, especially rural peasants, education was still limited to training in household duties such as cooking and sewing.

## IX EDUCATION DURING THE PROTESTANT REFORMATION

The religious Reformation of the 16th century marked a decline in the authority of the Catholic Church and contributed to the emergence of the middle classes in Europe. Protestant religious reformers, such as John Calvin, Martin Luther, and Huldreich Zwingli, rejected the authority of the Catholic pope and created reformed Christian, or Protestant, churches. In their ardent determination to instruct followers to read the Bible in their native language, reformers extended literacy to the masses. They established vernacular primary schools that offered a basic curriculum of reading, writing, arithmetic, and religion for children in their own language. Vernacular schools in England, for example, used English to teach their pupils. As they argued with each other and with the Roman Catholics on religious matters, Protestant educators wrote catechisms—primary books that summarized their religious doctrine—in a question and answer format.

While the vernacular schools educated both boys and girls at the primary level, upper-class boys attended preparatory and secondary schools that continued to emphasize Latin and Greek. The *gymnasium* in Germany, the Latin grammar school in England, and the *lycee* in France were preparatory schools that taught young men the classical languages of Latin and Greek required to enter universities.

Martin Luther believed the state, family, and school, along with the church, were leaders of the Reformation. Since the family shaped children's character, Luther encouraged parents to teach their children reading and religion. Each family should pray together, read the Bible, study the catechism, and practice a useful trade. Luther believed that government should assist schools in educating literate, productive, and religious citizens. One of Luther's colleagues, German religious reformer Melanchthon, wrote the school code for the German region of Württemberg, which became a model for other regions of Germany and influenced education throughout Europe. According to this code, the government was responsible for supervising schools and licensing teachers.

The Protestant reformers retained the dual-class school system that had developed in the Renaissance. Vernacular schools provided primary instruction for the lower classes, and the various classical humanist and Latin grammar schools prepared upper-class males for higher education.

## X EDUCATIONAL THEORY IN THE 17TH CENTURY

Educators of the 17th century developed new ways of thinking about education. Czech education reformer Jan Komensky, known as Comenius, was particularly influential. A bishop of the Moravian Church, Comenius escaped religious persecution by taking refuge in Poland, Hungary, Sweden, and The Netherlands. He created a new educational philosophy called Pansophism, or universal knowledge, designed to bring about worldwide understanding and peace. Comenius advised teachers to use children's senses rather than memorization in instruction. To make learning interesting for children, he wrote *The Gate of Tongues Unlocked* (1631), a book for teaching Latin in the student's own language.

He also wrote *Orbis Sensualium Pictus* (1658; *The Visible World in Pictures*, 1659) consisting of illustrations that labeled objects in both their Latin and vernacular names. It was one of the first illustrated books written especially for children.

The work of English philosopher John Locke influenced education in Britain and North America. Locke examined how people acquire ideas in *An Essay Concerning Human Understanding* (1690). He asserted that at birth the human mind is a blank slate, or *tabula rasa*, and empty of ideas. We acquire knowledge, he argued, from the information about the objects in the world that our senses bring to us. We begin with simple ideas and then combine them into more complex ones.

Locke believed that individuals acquire knowledge most easily when they first consider simple ideas and then gradually combine them into more complex ones. In *Some Thoughts Concerning Education* (1697), Locke recommended practical learning to prepare people to manage their social, economic, and political affairs efficiently. He believed that a sound education began in early childhood and insisted that the teaching of reading, writing, and arithmetic be gradual and cumulative. Locke's curriculum included conversational learning of foreign languages, especially French, mathematics, history, physical education, and games.

## XI EDUCATION DURING THE ENLIGHTENMENT

The Age of Enlightenment in the 18th century produced important changes in education and educational theory. During the Enlightenment, also called the Age of Reason, educators believed people could improve their lives and society by using their reason, their powers of critical thinking. The Enlightenment's ideas had a significant impact on the American Revolution (1775-1783) and early educational policy in the United States. In particular, American philosopher and scientist Benjamin Franklin emphasized the value of utilitarian and scientific education in American schools. Thomas Jefferson, the third president of the United States, stressed the importance of civic education to the citizens of a democratic nation. The Enlightenment principles that considered education as an instrument of social reform and improvement remain fundamental characteristics of American education policy.

## XII EDUCATION IN THE 19TH CENTURY

The foundations of modern education were established in the 19th century. Swiss educator Johann Heinrich Pestalozzi, inspired by the work of French philosopher Jean Jacques Rousseau, developed an educational method based on the natural world and the senses. Pestalozzi established schools in Switzerland and Germany to educate children and train teachers. He affirmed that schools should resemble secure and loving homes.

Like Locke and Rousseau, Pestalozzi believed that thought began with sensation and that teaching should use the senses. Holding that children should study the objects in their natural environment, Pestalozzi developed a so-called "object lesson" that involved exercises in learning form, number, and language. Pupils determined and traced an object's form, counted objects, and named them. Students progressed from these lessons to exercises in drawing, writing, adding, subtracting, multiplying, dividing, and reading.

Pestalozzi employed the following principles in teaching: (1) begin with the concrete object before introducing abstract concepts; (2) begin with the immediate environment before dealing with what is distant and remote; (3) begin with easy exercises before introducing complex ones; and (4) always

proceed gradually, cumulatively, and slowly. American educator Henry Barnard, the first U.S. Commissioner of Education, introduced Pestalozzi's ideas to the United States in the late 19th century. Barnard also worked for the establishment of free public high schools for students of all classes of American society.

German philosopher Johann Herbart emphasized moral education and designed a highly structured teaching technique. Maintaining that education's primary goal is moral development, Herbart claimed good character rested on knowledge while misconduct resulted from an inadequate education. Knowledge, he said, should create an "apperceptive mass"—a network of ideas—in a person's mind to which new ideas can be added. He wanted to include history, geography, and literature in the school curriculum as well as reading, writing, and arithmetic. Based on his work, Herbart's followers designed a five-step teaching method: (1) prepare the pupils to be ready for the new lesson, (2) present the new lesson, (3) associate the new lesson with ideas studied earlier, (4) use examples to illustrate the lesson's major points, and (5) test pupils to ensure they had learned the new lesson.

## A Kindergarten

German educator Friedrich Froebel created the earliest kindergarten, a form of preschool education that literally means "child's garden" in German. Froebel, who had an unhappy childhood, urged teachers to think back to their own childhoods to find insights they could use in their teaching. Froebel studied at Pestalozzi's institute in Yverdon, Switzerland, from 1808 to 1810. While agreeing with Pestalozzi's emphasis on the natural world, a kindly school atmosphere, and the object lesson, Froebel felt that Pestalozzi's method was not philosophical enough. Froebel believed that every child's inner self contained a spiritual essence—a spark of divine energy—that enabled a child to learn independently.

In 1837 Froebel opened a kindergarten in Blankenburg with a curriculum that featured songs, stories, games, gifts, and occupations. The songs and stories stimulated the imaginations of children and introduced them to folk heroes and cultural values. Games developed children's social and physical skills. By playing with each other, children learned to participate in a group. Froebel's gifts, including such objects as spheres, cubes, and cylinders, were designed to enable the child to understand the concept that the object represented. Occupations consisted of materials children could use in building activities. For example, clay, sand, cardboard, and sticks could be used to build castles, cities, and mountains.

Immigrants from Germany brought the kindergarten concept to the United States, where it became part of the American school system. Margarethe Meyer Schurz opened a German-language kindergarten in Watertown, Wisconsin, in 1855. Elizabeth Peabody established an English-language kindergarten and a training school for kindergarten teachers in Boston, Massachusetts, in 1860. William Torrey Harris, superintendent of schools in St. Louis, Missouri, and later a U.S. commissioner of education, made the kindergarten part of the American public school system.

## B Social Darwinism

British sociologist Herbert Spencer strongly influenced education in the mid-19th century with social theories based on the theory of evolution developed by British naturalist Charles Darwin. Spencer revised Darwin's biological theory into social Darwinism, a body of ideas that applied the theory of evolution to society, politics, the economy, and education. Spencer maintained that in modern

industrialized societies, as in earlier simpler societies, the “fittest” individuals of each generation survived because they were intelligent and adaptable. Competition caused the brightest and strongest individuals to climb to the top of the society. Urging unlimited competition, Spencer wanted government to restrict its activities to the bare minimum. He opposed public schools, claiming that they would create a monopoly for mediocrity by catering to students of low ability. He wanted private schools to compete against each other in trying to attract the brightest students and most capable teachers. Spencer’s social Darwinism became very popular in the last half of the 19th century when industrialization was changing American and Western European societies.

Spencer believed that people in industrialized society needed scientific rather than classical education. Emphasizing education in practical skills, he advocated a curriculum featuring lessons in five basic human activities: (1) those needed for self-preservation such as health, diet, and exercise; (2) those needed to perform one’s occupation so that a person can earn a living, including the basic skills of reading, writing, computation, and knowledge of the sciences; (3) those needed for parenting, to raise children properly; (4) those needed to participate in society and politics; and (5) those needed for leisure and recreation. Spencer’s ideas on education were eagerly accepted in the United States. In 1918 the *Cardinal Principles of Secondary Education*, a report issued by the National Education Association, used Spencer’s list of activities in its recommendations for American education.

## XIII NATIONAL SYSTEMS OF EDUCATION

In the 19th century, governments in the United Kingdom, Germany, France, Italy, and other European countries organized national systems of public education. The United States, Canada, Argentina, Uruguay, and other countries in North and South America also established national education systems based largely on European models.

### A In the United Kingdom

The Church of England and other churches often operated primary schools in the United Kingdom, where students paid a small fee to study the Bible, catechism, reading, writing, and arithmetic. In 1833 the British Parliament passed a law that gave some government funds to these schools. In 1862 the United Kingdom established a school grant system, called payment by results, in which schools received funds based on their students’ performance on reading, writing, and arithmetic tests. The Education Act of 1870, called the Forster Act, authorized local government boards to establish public board schools. The United Kingdom then had two schools systems: board schools operated by the government and voluntary schools conducted by the churches and other private organizations.

In 1878 the United Kingdom passed laws that limited child labor in factories and made it possible for more children to attend school. To make schooling available to working-class children, many schools with limited public and private funds used monitorial methods of instruction. Monitorial education, developed by British educators Joseph Lancaster and Andrew Bell, used student monitors to conduct lessons. It offered the fledgling public education system the advantage of allowing schools to hire fewer teachers to instruct the large number of new students. Schools featuring monitorial education used older boys, called monitors, who were more advanced in their studies, to teach younger children. Monitorial education concentrated on basic skills—reading, writing, and arithmetic—that were broken down into small parts or units. After a monitor had learned a unit—such as spelling words of two or three letters that began with the letter A—he would, under the master teacher’s supervision, teach this



unit to a group of students. By the end of the 19th century, the monitorial system was abandoned in British schools because it provided a very limited education.

## B In Russia

Russian tsar Alexander II initiated education reforms leading to the Education Statute of 1864. This law created *zemstvos*, local government units, which operated primary schools. In addition to *zemstvo* schools, the Russian Orthodox Church conducted parish schools. While the number of children attending school slowly increased, most of Russia's population remained illiterate. Peasants often refused to send their children to school so that they could work on the farms. More boys attended school than girls since many peasant parents considered female education unnecessary. Fearing that too much education would make people discontented with their lives, the tsar's government provided only limited schooling to instill political loyalty and religious piety.

## C In the United States

Before the 19th century elementary and secondary education in the United States was organized on a local or regional level. Nearly all schools operated on private funds exclusively. However, beginning in the 1830s and 1840s, American educators such as Henry Barnard and Horace Mann argued for the creation of a school system operated by individual states that would provide an equal education for all American children. In 1852 Massachusetts passed the first laws calling for free public education, and by 1918 all U.S. states had passed compulsory school attendance laws. See Public Education in the United States.

# XIV EDUCATION IN THE TWENTIETH CENTURY

At the beginning of the 20th century, the writings of Swedish feminist and educator Ellen Key influenced education around the world. Key's book *Barnets århundrade* (1900; *The Century of the Child*, 1909) was translated into many languages and inspired so-called progressive educators in various countries. Progressive education was a system of teaching that emphasized the needs and potentials of the child, rather than the needs of society or the principles of religion. Among the influential progressive educators were Hermann Lietz and Georg Michael Kerschensteiner of Germany, Bertrand Russell of England, and Maria Montessori of Italy.

## A Montessori

Montessori's methods of early childhood education have become internationally popular. Trained in medicine, Montessori worked with developmentally disabled children early in her career. The results of her work were so effective that she believed her teaching methods could be used to educate all children. In 1907 Montessori established a children's school, the *Casa dei Bambini* (Children's House), for poor children from the San Lorenzo district of Rome. Here she developed a specially prepared environment that featured materials and activities based on her observations of children. She found that children enjoy mastering specific skills, prefer work to play, and can sustain concentration. She also believed that children have a power to learn independently if provided a properly stimulating environment.

Montessori's curriculum emphasized three major classes of activity: (1) practical, (2) sensory, and (3) formal skills and studies. It introduced children to such practical activities as setting the table, serving

a meal, washing dishes, tying and buttoning clothing, and practicing basic social manners. Repetitive exercises developed sensory and muscular coordination. Formal skills and subjects included reading, writing, and arithmetic. Montessori designed special teaching materials to develop these skills, including laces, buttons, weights, and materials identifiable by their sound or smell. Instructors provided the materials for the children and demonstrated the lessons but allowed each child to independently learn the particular skill or behavior.

In 1913 Montessori lectured in the United States on her educational method. American educators established many Montessori schools after these lectures, but they declined in popularity in the 1930s as American educators stressed greater authority and control in the classroom. A revival of Montessori education in the United States began in the 1950s, coinciding with a growing emphasis on early childhood education.

## B Dewey

The work of American philosopher and educator John Dewey was especially influential in the U.S. and other countries in the 20th century. Dewey criticized educational methods that simply amused and entertained students or were overly vocational. He advocated education that would fulfill and enrich the current lives of students as well as prepare them for the future. The activity program of education, which derived from the theories of Dewey, stressed the educational development of the child in terms of individual needs and interests. It was the major method of instruction for most of the 20th century in elementary schools of the United States and many other countries.

## C Piaget

The work of Swiss psychologist Jean Piaget had a major impact on educational theory in the early 20th century, particularly in Europe. Piaget wrote extensively on the development of thought and language patterns in children. He examined children's conceptions of number, space, logic, geometry, physical reality, and moral judgment. Piaget believed that children, by exploring their environment, create their own cognitive, or intellectual, conceptions of reality. By continually interacting with their environment, they keep adding to and reshaping their conceptions of the world. Piaget asserted that human intelligence develops in stages, each of which enhances a person's understanding of the world in a new and more complex way.

## XV POLITICAL INFLUENCES

Political leadership has affected the education systems of many countries in the 20th century. In the Union of Soviet Socialist Republics (USSR) under Communism and in Germany under the leadership of National Socialism, totalitarian systems of government imposed strict guidelines on the organization of national education systems. Many other countries during the 20th century—including the United States—have sought to balance control of their education systems between the federal government and local governments or private organizations. Most countries in the 20th century have also taken steps to increase access to education.

## A In the United States

Local and state governments have retained most of the responsibility for operating public education in the United States during the 20th century. Because individual communities often have different

educational priorities and different abilities to finance public education systems, school systems vary from one region to another. State governments—and occasionally the federal government—attempt to reduce disparity between regions by establishing various requirements for school financing, academic standards, and curriculum. See Education in the United States: Tension Between Localism and Centralization.

In the early 20th century access to education in the United States was largely divided along racial lines. State laws segregated most schools in the American South by race. No such laws existed in northern states, but school districts there often established district boundaries to ensure separate facilities for black and white students. In both northern and southern states, school facilities for African American students were usually inadequate, public transportation to such schools was insufficient or nonexistent, and public expenditures per student fell well below that provided per student in white schools. In 1954 the Supreme Court of the United States decided in *Brown v. Board of Education of Topeka* that separate facilities for black and white students resulted in unequal educational opportunities, and that such segregation was unconstitutional. Since then, public school systems throughout the United States have attempted to desegregate schools and to provide equal educational opportunity for all students. Integration efforts and affirmative action programs in American schools have helped enable African Americans, Hispanic Americans, and other minorities to increase high school and college attendance rates and to make impressive gains on standardized test scores. See Education in the United States: Education and Equality.

## B In the Soviet Union

After the Russian Revolution in 1917 the Communist Party's Central Committee made the important educational decisions in the Soviet Union. In the 1920s Communist leader Joseph Stalin established a rigid curriculum for Soviet education that stressed science, mathematics, and Communist ideology. Soviet schools attracted large numbers of foreign visitors, especially individuals from developing countries. In 1957 the Soviet Union launched Sputnik, the first artificial satellite sent into space. To many educators around the world, this achievement indicated the advanced state of Soviet technological learning. Soviet educator Anton Semyonovich Makarenko also brought international recognition to the Soviet education system for his work on the rehabilitation of juvenile delinquents. Many observers criticized the rigidity and authoritarianism of the Soviet education system. In 1989 and 1990 Mikhail Gorbachev, then the general secretary of the Communist Party and the leader of the USSR, tried to reform the country's education system by allowing schools more local control. However, the nation was suffering from political upheaval and a weak economy, which hampered efforts aimed at educational reform.

With the fall of the Soviet Union in 1991 the former Soviet republics, such as Russia, Ukraine, and Georgia, became independent nations that controlled their own political and education systems. Education in Russia and the other new countries faces especially daunting obstacles because the struggling economies of these nations often provide insufficient funds for education. Other problems in educational administration and schooling stem from tensions between the many different ethnic and language groups in most of these nations. While Russia has a predominantly Russian population, over 100 other ethnic groups also comprise its population.

## C In Germany

The fall of Communism has also affected education in Germany. The disintegration of the Soviet Union from 1989 to 1991, and the tearing down of the Berlin Wall in 1989 helped lead to the collapse of the Communist government in East Germany. East Germany reunified with West Germany in 1990 and the West German school system was extended throughout the reunited nation. The Federal Republic of Germany follows a joint federal-state system of education. The *Grundgesetz* (Basic Law) gives individual German states the major responsibility for primary and secondary education. In higher education, the federal government works in conjunction with the states.

The kindergarten, developed by Froebel in the 19th century, remains popular in Germany. Children begin compulsory education at age six in the *Grundschule*, the basic primary school, and continue there until they are nine years old. When they finish primary school, German students go to separate secondary schools, such as the *Hauptschule*, *Realschule*, *Gymnasium*, and *Gesamtschule*. The *Hauptschule* offers a general education, the *Realschule* prepares students for middle-level careers as managers and supervisors, the *Gymnasium* is a university preparatory school, and the *Gesamtschulen* is a comprehensive secondary school. German education also includes extensive vocational, technical, and apprenticeship arrangements.

## D In France

The central government controls most education in France. A federal department, the Ministry of Education, sets the curriculum so that all students study the same subjects at the same ages throughout the country. French schools emphasize careful thinking and correct use of the French language. The *lycee*, the traditional academic secondary school, prepares students to attend universities. The *grandes écoles*, the great schools, are universities that train future leaders for government service, business administration, and engineering. Aside from providing free elementary and secondary education, the French central government provides financial aid to Catholic schools. In 1960 the government also began providing financial subsidies to private schools that meet state standards.

## E In Developing Nations

The 20th century has also been marked by the emergence of national school systems among developing nations, particularly in Asia and Africa. Compulsory elementary education has become nearly universal, but evidence indicates that large numbers of children—perhaps as many as 50 percent of those age 6 to 18 throughout the world—do not attend school. To improve education on the elementary and adult levels, the United Nations Educational, Scientific and Cultural Organization (UNESCO) conducts literacy campaigns and other educational projects. UNESCO attempts to put every child in the world into school and to eliminate illiteracy. Some progress has been noted, but it has become obvious that considerable time and effort are needed to produce universal literacy.

*For additional information on national systems of education, see the Education section in the articles on individual countries.*

Contributed By:

Gerald L. Gutek

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