



# United States of America

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## Principles and general objectives of education

One of the primary aims of public education in the United States is to ensure equality of access and opportunity for all boys and girls, including minority groups and the disabled. Moreover, U.S. public schools have a long tradition of coeducation.

Education in the United States generally reflects the values and priorities of the society. These include a dedication to democratic ideals, a commitment to individual freedom, and a respect for the diversity of the population. In broad terms, the U.S. education system has as its goal the establishment of a quality education that will enable all children to achieve their highest potential as individuals, serve effectively as citizens of a free society, and successfully compete in a changing global marketplace.

The education system in the United States is highly decentralized. According to the Tenth Amendment to the U.S. Constitution: "The powers not delegated to the United States by the Constitution, nor prohibited by it to the States, are reserved to the States." In accordance with this Amendment, the federal government has no authority to establish a national education system, nor do federal agencies ordinarily prescribe policy or curriculum for local schools. Such decisions are made at the state or district level.

Because of this decentralization, laws governing the structure and content of education programmes may vary greatly from state to state, district to district. Some of these laws are very prescriptive; others are broad enough to allow local school districts considerable flexibility in the way they operate their schools.

On the other hand, despite this opportunity for experimentation and diversity, the educational programmes of the 50 states are remarkably similar, undoubtedly as the result of such common factors as the social and economic needs of the nation, the frequent transfer of students and teachers from one part of the country to another, and the role of national accrediting agencies in shaping educational practice.

## Current educational priorities and concerns

The first federal call for the reform of American education came in 1981, when Secretary of Education T.H. Bell created a National Commission on Excellence in Education to "report on the quality of education in America." That report, *A Nation at Risk*, was published in 1983 and called for widespread, systemic reform and made four major recommendations: a strengthening of graduation requirements, more rigorous and measurable standards, more time in school, and significant improvement of teaching. With this report, the nation as a whole was alerted to the plight of U.S. education and the need for a comprehensive revitalization of the school system.



However, for the next two or three years reform was chiefly confined to state and local initiatives.

In 1989, shortly after he took office, President G. Bush invited the Nation's fifty governors to attend an Education Summit to discuss the current condition of education and what course of action might be adopted to reverse the trend toward mediocrity. At this Summit, a remarkable consensus emerged on the nature of current educational problems and the broad strategies necessary to solve these problems. The Governors, in co-operation with the White House and the education community, focused the attention of the public on seeking solutions by establishing six National Education Goals and insisting that they be achieved by the year 2000: "(1) All children in America will start school ready to learn; (2) The high school graduation rate will increase to at least 90 percent; (3) American students will leave grades four, eight, and twelve having demonstrated competency in challenging subject matter, including English, mathematics, science, foreign languages, civics and government, economics, art, history, and geography; and every school in America will ensure that all students learn to use their minds well, so they may be prepared for responsible citizenship, further learning, and productive employment in our Nation's modern economy; (4) U.S. students will be first in the world in science and mathematics achievement; (5) Every adult American will be literate and will possess the knowledge and skills necessary to compete in a global economy and exercise the rights and responsibilities of citizenship; (6) Every school in America will be free of drugs and violence and will offer a disciplined environment conducive to learning."

The identification and articulation of goals, however, constituted no more than a first step in the direction of education reform. Reform initiatives had sprung up in all parts of the country, many of them innovative and effective; but there was no evidence that the nation as a whole had the ability or the inclination to adopt a single plan of action leading to the achievement of the National Goals by the year 2000. In the first place, given the widespread diversity of regions, states, and cultures in the United States, it would be difficult to devise a broad systemic approach that would work in every part of the country for every group. In the second place, the political system of the United States is not structured for national solutions in the field of education. Except in very special circumstances, the U.S. Department of Education is forbidden by law to involve itself in curricular decisions at the state and local level, and in only one or two specific areas (for example, civil rights enforcement) is the federal government empowered to take certain actions in the management of local schools.

For these reasons, public policy leaders recognized from the outset that any federal role in achieving the National Education Goals would have to gain its authority through persuasion rather than coercion. The White House and the Department of Education could propose solutions; the states and local school districts could accept or reject federal proposals.

Yet many leaders felt that some federal leadership was necessary if the nation as a whole was to improve its schools and achieve the National Education Goals by the year 2000. There were several things the Department of Education could do (indeed was already doing) to contribute to the development of a plan to meet the Goals.



In the first place, the Department (through its Office of Educational Research and Improvement—OERI) was funding and conducting research to analyze the problems faced by educators and those strategies and solutions that seemed most successful. In the second place, the Department, through its Educational Resources Information Centers (ERIC) and other databases and networks, was disseminating a wide range of pertinent information on educational programmes to the educational community. For this reason, many reformers concluded that the Department could use these legitimate functions to provide national leadership in achieving the six National Education Goals.

In order to monitor the progress of the Nation in meeting the Goals and to provide a national focus for their implementation, the National Goals Panel was created in July of 1990. In its 1992 report, the National Goals Panel recognized the need for the development of “new, clear, and ambitious standards for the educational achievement of all students.” A few months later Congress established the National Council on Education Standards and Testing, a bipartisan committee that recommended the creation of voluntary national standards and a voluntary national system of student assessments. Conceding the enormity of such a task, the panel adopted a charter for a National Education Standards and Assessment Council (NESAC). The mission of this Council was “to ensure that the many standard-setting activities currently underway move forward expeditiously and reflect a broad national consensus about what all American students should know and be able to do if they are to achieve at world-class levels.”

Given the nature of the education system in the United States, it followed that National Education Standards could not be mandated by the federal government but had to be accepted voluntarily by each of the 50 states. However, since there was an extraordinary national consensus concerning the current state of U.S. schools, NESAC did not encounter significant resistance in its attempts to lead the way toward national standards, though some critics feared that standardized national testing might lead to a standardized national curriculum.

One of the first initiatives of NESAC was to ask professional organizations to develop voluntary national standards in their own fields. For example, the National Council of Teachers of Mathematics prepared mathematical standards; and literally thousands of teachers and scholars nationwide worked together to create standards in science, history, the arts, civics, geography, and English.

In order to assist organizations in the preparation of these standards, the U.S. Department of Education gave grants to major professional and scholarly organizations to develop voluntary national standards in different subjects. Department officials made it clear, however, that ‘national standards did not mean ‘Federal standards nor did ‘national testing mean ‘Federal testing. The standards and testing would be developed by NESAC in co-operation with professional organizations, and the States would be free to adopt or reject them. NESAC completed its initial task in 1992 and was disbanded. The National Goals Panel continued to monitor the development of national standards and testing.

In its annual reports (with the first appearing in 1991) the National Goals Panel began to address for the first time the performance of American schools on the



various Goals. For example, the 1992 report devoted an entire chapter to the subject of *American Education in a Global Context* and examined the data regarding drop-outs, mathematics and science achievement, and higher education.

In 1991, the Bush Administration announced the establishment of *AMERICA 2000*, a strategy to implement the six goals. The Administration preferred the word 'strategy' rather than 'programme' because it was proposing a general framework in which any number of programmes might fit rather than mandating specific policies and practices at any level.

The details of *AMERICA 2000* drew some criticism from both ends of the political spectrum. The unions were opposed to provisions for school choice, while conservatives saw some elements as a threat to the local autonomy of schools. Both groups expressed concerns about a national testing programme. However, there was widespread support for some of the provisions of the strategy. By the end of 1992, 48 states and over 2,000 communities had committed themselves to the achievement of the National Education Goals and had become a part of *AMERICA 2000*.

In 1992, President Clinton was elected. The new Administration maintained some of the initiatives contained in *AMERICA 2000*, but rejected several key measures (for example, the encouragement of a choice initiative that included private schools).

In order to distinguish its efforts from *AMERICA 2000*, the Clinton Administration called its set of initiatives *GOALS 2000* and offered a legislative package of five proposed laws to support its platform for educational reform throughout the nation. The proposed laws offered a systemic, integrated policy and procedure for bringing about reform in education for the first time in the history of this nation. The centerpiece of that legislative package and systemic educational reform (*GOALS 2000: Educate America Act*, see below) was passed in 1994. Title I of *Goals 2000* codified into law the six original National Education Goals, and added additional goals on parental involvement and professional development. The establishment of the goals recognized that learning begins at birth and continues through life. The goals provided a framework for a new, reformed education system for the twenty-first century.

The new laws were designed to encourage comprehensive education reform throughout the United States. The federal funds to be appropriated under these laws were intended to serve as a catalyst to the states to join voluntarily (the legislation is not compulsory) in the reform movement. The legislation called for total systemic reform, i.e. improved early childhood education, parent involvement, high academic and skill standards, curricular reform to meet those standards, a focus on the disadvantaged, opportunities for all to learn and achieve, formative and summative assessment, professional development of teachers and administrators, school-based management and accountability, systemic programmes of school-to-work transition, safer schools, and educational research to support these provisions. Never before has the United States Department of Education offered such a comprehensive package for reform in accordance with its mission "to ensure equal access to education and to promote educational excellence throughout the Nation." During its second term in office, the Clinton Administration supported the development of rigorous national



tests for use by individual students based on the widely accepted fourth-grade National Assessment of Educational Progress (NAEP) reading test and the eighth-grade Third International Math and Science Study (TIMSS) test of mathematics.

The No Child Left Behind Act of 2001 (NCLB) is a landmark in education reform designed to improve student achievement and change the culture of America's schools. President George W. Bush describes this law as the “cornerstone of my administration.” Under the NCLB, each state must measure every public school student’s progress in reading and mathematics in each of grades 3 through 8 and at least once during grades 10 through 12. By school year 2007/08, assessments (or testing) in science will be underway. These assessments must be aligned with state academic content and achievement standards. They will provide parents with objective data on where their child stands academically.

The NCLB requires states and school districts to give parents easy-to-read, detailed report cards on schools and districts, telling them which ones are succeeding and why. Included in the report cards are student achievement data broken out by race, ethnicity, gender, English language proficiency, migrant status, disability status and low-income status; as well as important information about the professional qualifications of teachers. With these provisions, the NCLB ensures that parents have important, timely information about the schools their children attend. Furthermore, the NCLB defines the qualifications needed by teachers and paraprofessionals who work on any facet of classroom instruction. It requires that states develop plans to achieve the goal that all teachers of core academic subjects be highly qualified by the end of the 2005/06 school year. States must include in their plans annual, measurable objectives that each local school district and school must meet in moving toward the goal; they must report on their progress in the annual report cards. As part of the accountability provisions set forth in the law, the NCLB has set the goal of having every child achieving proficiency according to state-defined educational standards by the end of the 2013/14 school year. To reach that goal, every state has developed benchmarks to measure progress and make sure every child is learning.

In exchange for the strong accountability, the NCLB gives states and local education agencies more flexibility in the use of their federal education funding. As a result, principals and administrators will have more freedom to implement innovations and allocate resources as policy-makers at the state and local levels see fit, thereby giving local people a greater opportunity to affect decisions regarding their schools’ programmes. The NCLB puts a special emphasis on implementing educational programmes and practices that have been clearly demonstrated to be effective through rigorous scientific research. Federal funding will be targeted to support such programmes. For example, the Reading First programme makes federal funds available to help reading teachers in the early grades strengthen old skills and gain new ones in instructional techniques that scientifically based research has shown to be effective.

Since the Elementary and Secondary Education Act first passed Congress in 1965, the federal government has spent more than \$242 billion through 2003 to help educate disadvantaged children. Yet, the achievement gap between rich and poor and white and minority students remains wide. According to the most recent National Assessment of Educational Progress (NAEP) on reading in 2000, only 32% of fourth-



graders can read at a proficient level and thereby demonstrate solid academic achievement; and while scores for the highest-performing students have improved over time, those of America's lowest-performing students have declined.

## Laws and other basic regulations concerning education

Each state is responsible for its own education system, and over the years state legislatures have enacted laws to govern the organization and operation of public instruction. The role of the Federal Government in education has been one of broad leadership without undue control. It is the legal responsibility of federal authorities to safeguard the right of every citizen to gain equal access to free public institutions and equal opportunity in the pursuit of learning. While fulfilling this responsibility, the Federal Government also attempts to improve the quality of education through the funding of research, direct aid to students, and the dissemination of knowledge about teaching and learning.

To achieve these ends, the Congress over the years has enacted legislation establishing a variety of funded programmes, most, though not all, administered by the U.S. Department of Education through the issuance of regulations and the monitoring of Federally funded educational activities. "These programmes contribute significant resources to participating states. In crafting the laws, in implementing guidelines for local operations of these programmes, and in determining the means to evaluate the success of these efforts, the legislative and executive arms of the federal government have a means to set expectations for the groups targeted by the legislation. In fact, their efforts have had impact on the rest of the American students as well" (Baker & Linn, 1995, p. 198).

The following are major federal laws affecting education that were passed during the recent years.

The **National Literacy Act** of 1991 (Public Law 102-73) established new literacy programmes, provided higher authorization levels for some existing adult literacy programmes, and restored eligibility for various programmes to the freely associated states (i.e., the Republic of the Marshall Islands and the Federated States of Micronesia). The purpose of the Act was "to enhance the literacy and basic skills of adults, to ensure that all adults in the United States acquire the basic skills necessary to function effectively and achieve the greatest possible opportunity in their work and in their lives, and to strengthen and coordinate adult literacy programmes." It also established the National Institute for Literacy, the National Institute Board, and the Interagency Task Force on Literacy.

The **Education Council Act** of 1991 (Public Law 102-62) established the National Education Commission on Time and Learning and the National Council on Education Standards and Testing. The National Education Commission on Time and Learning was to review the relationship between time and learning in the Nation's schools and make a report on its findings by April 1994. The National Council on Education Standards and Testing was to provide advice on the desirability and feasibility of developing national standards and conducting national testing of school



children. The Council was directed to make its report by December 1991. Both reports have been published.

The **Reauthorization of the Higher Education Act** of 1965 (1992, Public Law 102-325) extended for five years the provisions of the Higher Education Act, as reauthorized in 1986. This legislation (which included renewal of the higher-education student aid programmes, such as Pell grants and student loans) had as its broad purpose to expand student access to post-secondary education, encourage educational excellence, and ensure integrity in making service delivery. It also contained substantial amendments to the earlier act, adding more than forty programmes in higher education. The **Higher Education Amendments** of 1998 (Public Law 105-244) substantially amended, and reauthorized, through fiscal year 2003, the Higher Education Act of 1965.

The **Rehabilitation Act Amendments** of 1992 expanded the scope of previous legislation by (1) requiring the states to develop evaluative studies and performance indicators for many of their programmes, (2) vesting authority in the Secretary of Education to increase client choice within the vocational rehabilitation process, and providing authority to support business partnerships to develop model projects that give unemployed workers with disabilities the opportunity to acquire the knowledge and skills needed to advance employment. The purpose of this bill was to bring greater integrity to existing programmes and expand the educational opportunities for disabled Americans.

The **Student Loan Reform Act** of 1993 (Public Law 103-66) reformed the student aid programme by phasing in a system of direct lending which will eliminate private lenders and guaranty agencies, empowering the U.S. Department of Education to channel loan funds through post-secondary institutions. Schools with adequate administrative capacity can originate loans on campus. Smaller schools have alternative processes. Students can choose among a variety of repayment options, including income contingency.

The **Goals 2000: Educate America Act** of 1994 (Public Law 103-227) established a new federal partnership through a system of grants to states and local communities to reform the nation's education system. This legislation formalized the six National Education Goals and their objectives, added two new goals, and established in law the National Education Goals Panel. The Panel has the responsibility for reporting annually on State and national progress toward achieving the National Education Goals and for keeping this nation focused on the steps necessary to meet the goals. It has responsibility for identifying actions that should be taken to enhance progress toward achieving the Goals and to provide all students with a fair opportunity to learn.

The Act also created a National Education Standards and Improvement Council (NESIC) to provide voluntary national certification of state and local education standards and assessments to spur increased educational opportunity while creating greater accountability and responsibility for students and schools. NESIC will also work toward the development of criteria for certifying assessments that are consistent with the content standards, assessments that can be used to: (i) exemplify for students, parents, and teachers the kinds and levels of student achievement that are



expected; (ii) improve classroom teaching and learning; (iii) inform students, parents, and teachers about student progress toward achieving the content standards; and (iv) measure and motivate individual students, schools, districts, States and the Nation to improve educational performance.

The Act also established the National Skills Standards Board to encourage, promote, and assist industry, labour, and education in the voluntary identification, development, and adoption of high standards needed in each work area and the matching of those needs to curricula, work experience, training, and training material. The Board is charged with the establishment of a means to assess and certify skills, using a wide range of evaluation techniques to measure achievement against the voluntary, broadly-based skill standards. It will also develop systems to keep the standards abreast of changes in occupational needs and technological innovations, and to disseminate information relating to the standards, curricula, training, assessment, and certification to develop voluntary national skill standards.

The previous six National Education Goals, along with two additional Goals provided by the Clinton administration, were enacted into law in 1994 as follows: “By the Year 2000: (1) All children in America will start school ready to learn; (2) The high school graduation rate will increase to at least 90 percent; (3) All students will leave grades four, eight, and twelve having demonstrated competency in challenging subject matter, including English, mathematics, science, foreign languages, civics and government, economics, art, history, and geography; and every school in America will ensure that all students learn to use their minds well, so they may be prepared for responsible citizenship, further learning, and productive employment in our Nation’s modern economy; (4) U.S. students will be first in the world in science and mathematics achievement; (5) Every adult American will be literate and will possess the knowledge and skills necessary to compete in a global economy and exercise the rights and responsibilities of citizenship; (6) Every school in the United States will be free of drugs, violence, and the unauthorized presence of firearms and alcohol and will offer a disciplined environment conducive to learning; (7) The Nation’s teaching force will have access to programmes for the continued improvement of their professional skills and the opportunity to acquire the knowledge and skills needed to instruct and prepare all American students for the next century; (8) Every school will promote partnerships that will increase parental involvement and participation in promoting the social, emotional, and academic growth of children.”

The **School-to-Work Opportunities Act** of 1994 (Public Law 103-239) established a national framework within which states and communities can develop ‘School-to-Work Opportunities’ programmes to prepare young people for first jobs and continuing education. It will facilitate the development of a system of rigorous academic and occupational preparation for students. The legislation provided seed money to states and communities to develop a system of programmes that include work-based learning, school-based learning, and connecting activities. School-to-Work programmes will provide students with a high school diploma (or its equivalent), a nationally recognized skill certificate, an associate degree (if appropriate), and may lead to a first job or to further education.

The **Educational Research, Development, Dissemination and Improvement Act** of 1994 (Part of Public Law 103-227) reauthorized the educational





research and dissemination activities of the U.S. Department of Education's Office of Educational Research and Improvement (OERI). It established five institutes which will conduct research in direct support of the national education goals: the National Institute on Student Achievement, Curriculum and Assessment; the National Institute on the Education of At-Risk Students; the National Institute on Educational Governance, Finance, Policy-Making, and Management; the National Institute on Early Childhood Development and Education; and the National Institute on Post-secondary Education, Libraries, and Lifelong Education. It also established an Office of Reform Assistance and Dissemination, and a National Library of Education. The legislation also authorized continuation of the regional educational laboratories and university-based research and development.

The **Improving America's Schools Act** of 1994 (Public Law 103-382) reauthorized the Elementary and Secondary Education Act of 1965, with some significant changes. The legislation includes Title I, the federal government's largest programme providing educational assistance to disadvantaged children; professional development and technical assistance programmes; safe and drug-free schools and communities provision; and a provision promoting school equity by focusing federal funds for high poverty areas. It also requires states to develop high-quality content and performance standards and assessments in order to qualify for certain kinds of federal funding; emphasizes local control and flexibility in exchange for accountability; shifts the focus away from remedial programmes and emphasizes overall school performance.

With passage of the **No Child Left Behind (NCLB) Act** of 2001, Congress reauthorized the Elementary and Secondary Education Act (ESEA), the principal federal law affecting education from kindergarten through high school. In amending ESEA, the new law represents a sweeping overhaul of federal efforts to support elementary and secondary education in the United States. It is built on four common-sense pillars: accountability for results; an emphasis on doing what works based on scientific research; expanded parental options; and expanded local control and flexibility.

In all fifty states, as well as in the six territories, education is compulsory—usually from the age of 6 or 7 to the age of 16 years. Public schools in the United States are free, at least through completion of secondary school (Grade XII). In all states and territories, private schools are permitted to operate. They are subject to state licensing and accrediting regulations. A few of these institutions may receive limited federal aid for specialized purposes, but the great majority are funded by sources other than the government.

## **Administration and management of the education system**

Because of the Tenth Amendment and the consequent evolution of a decentralized education system, the states and local districts assume a primary role in the organization and operation of U.S. schools. As far as public elementary and secondary education is concerned, in most states policies and requirements are determined by a **State Board of Education** and carried out under the leadership of a **Chief State School Officer** (the title varies with the state) and a staff of professional educators in a **State Department of Education**.



Different states have different laws and traditions governing the membership of State boards of education. In most states, members are appointed by the Governor; in some they are elected directly by the people; and in still other cases a member serves *ex officio*—that is, by virtue of holding another office (e.g. the Governorship).

The **Chief State School Officer** (the head of the State Department of education) is usually appointed by the Governor or by the State board of education though in a few States the office is elective. The duties of the chief State school officer normally include such functions as: distributing State funds to local education authorities (almost 50% of all funds spent on public elementary and secondary schools in the United States come from State sources); interpreting and administering State school laws; supervising the certification of teachers; helping to improve educational standards through in-service training programmes; and providing advisory services to local superintendents and school boards.

Typically, State regulations for public schools cover the following areas: length of the school day and school year; graduation requirements; and standards for teacher certification, school transportation, health services, and fire protection. For private schools, about one half of the states have some sort of mandatory approval process that results in a license, accreditation, or registration. A few states require that all private school teachers be certified by the State before they can teach in a private school. However, requirements vary from state to state, as does the manner in which such requirements are enforced.

State boards of education and their chief State school officers, supported by organizations like the **National Association of State Boards of Education** and the **Council of Chief State School Officers**, provide strong voices on the national scene and influence the direction of federal legislation and policy.

With the exception of Hawaii, each state is divided into local administrative districts with extensive authority and responsibility to establish and regulate public schools, both at the elementary and secondary levels. Generally, **local school districts** are governed by a board of education, usually composed of five to seven members, who have either been appointed by other governmental officials or elected by citizens who live within the district. Consistent with State law and official policy, the local board operates the public school system through the superintendent and the district staff.

The **district school board** and the **superintendent of schools** have a broad range of duties and responsibilities. The board and the superintendent are jointly responsible for preparing the school budget. They usually have considerable latitude within broad State guidelines to determine curriculum. They are responsible for hiring teachers and other personnel; for providing and maintaining school buildings; for purchasing school equipment and supplies; and, in most cases, for providing transportation for pupils who live beyond a reasonable walking distance from the school.

Their duties also include enacting regulations to govern the operation of schools. Such regulations must conform to State law. Indeed, the limitations on the actions of school boards are those established by the State legislature, or by the State



education agencies, which in most cases prescribe minimum standards for all local school districts.

Districts vary in size from rural systems, with one school building that houses all grades, to those in heavily populated urban areas, with hundreds of schools and thousands of teachers. Some states have **regional (county) service districts** or centres. These handle regulatory functions as well as advise local school systems and collect and provide statistical information.

Post-secondary institutions, both public and private, derive their authority to function and grant degrees from the state in which they are located. This authority is established in the State constitution or in laws passed by the legislature.

States may fund and operate a number of institutions of higher learning. Many larger states, such as California and New York, have highly developed statewide systems of higher education. Most states have some system of policy planning and co-ordination to guide the development of public higher education within the state, usually through **coordinating boards** and **consolidated governing boards**. However, in most statewide systems, individual campuses have a high degree of institutional autonomy, subject to the overall policies and plans established by State and/or institutional boards.

**Boards of trustees** (sometimes called 'boards of regents') make most major decisions affecting colleges and universities in the United States. In most instances the procedures for choosing board members are stated in the institution's founding charter, and, in accordance with the provisions of that charter, members may serve either specified terms or may be appointed for life. Public institutions such as State universities may have trustees who are elected or who are appointed by the State's Governor. Religious institutions usually have representatives of the institution's founding body serving as trustees. In recent years, many boards of trustees, both public and private, have attempted to broaden their membership to ensure a wider representation of the diverse constituencies that make up the institution's academic and social environment.

The only elementary and secondary schools funded and administered solely by the federal government are those established for the dependents of military and civilian personnel serving overseas. These are operated by the **Department of Defense**, with advice provided by local school advisory committees and a national advisory council. Schools serving military installations in the United States receive federal funding but operate under the direction of local school boards.

The Federal Government exercises no direct control over the establishment of post-secondary institutions or over the standards they maintain, except for some academies that prepare persons as career officers for the military. However, in a few areas, such as the enforcement of the Civil Rights Act as it relates to higher education programmes, the Federal Government has specific legal responsibilities.

Virtually all laws authorizing federal assistance to institutions require that they meet minimum licensing and accreditation standards. However, the practice of provisional accreditation does permit some institutions to receive assistance while



involved in formal and final accreditation. Post-secondary institutions are voluntary members of privately operated accrediting agencies, which periodically review the standards and practices of their membership. This re-accreditation occurs about every five years. For purposes of identifying those institutions eligible for federal assistance, the Secretary of Education recognizes the authority of most accrediting agencies, which review periodically the performance of their membership.

The Federal Government requests advice on administering some federal education programmes from citizen councils and committees established for that purpose by legislation, Executive Order, or administrative authority. The members are usually appointed by the President, the Secretary of the Department, or other agency head. The largest number of Federal advisory groups on education are associated with programmes administered by the **U.S. Department of Education**.

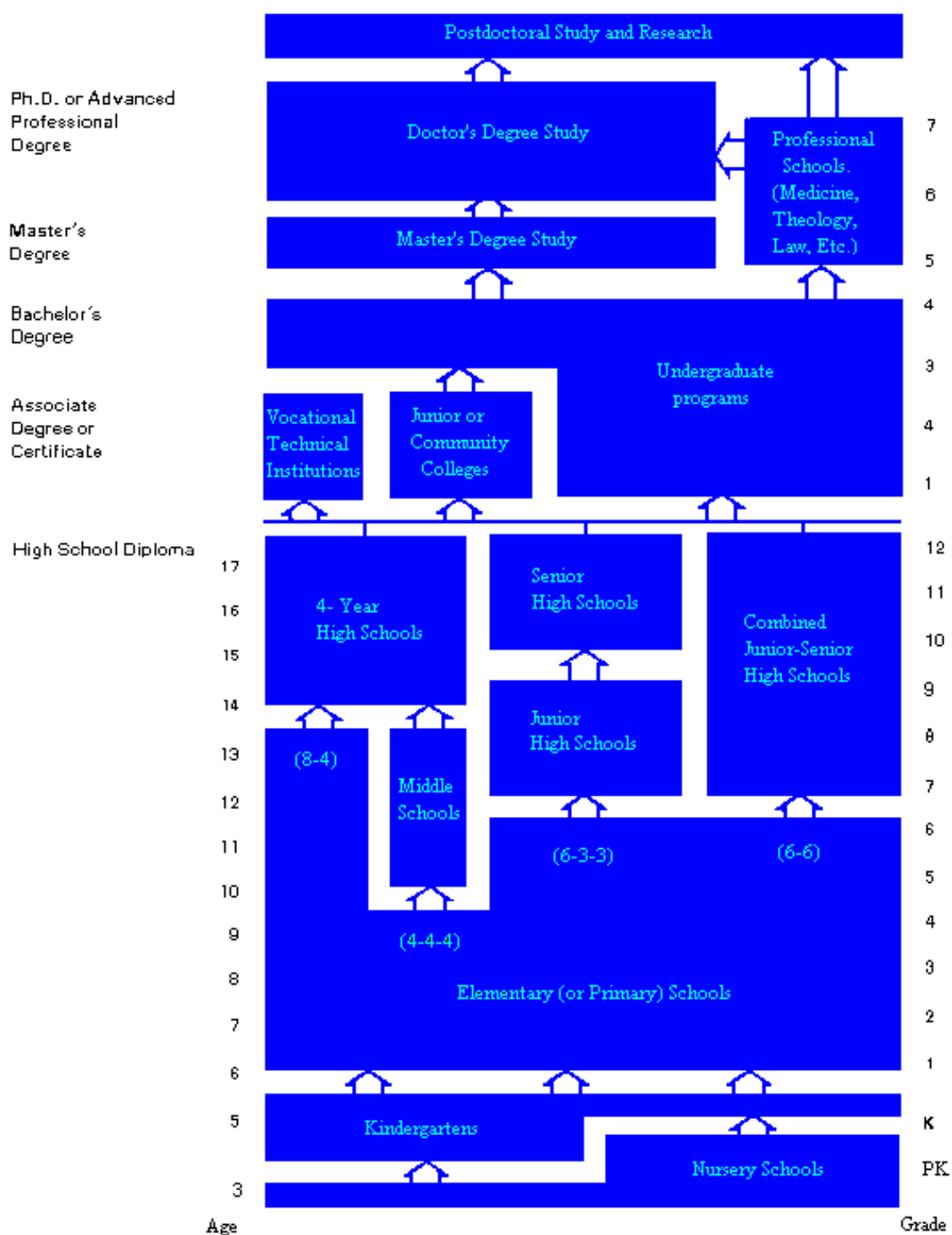
“The Department of Education was established in 1867. It later became a small bureau within the Department of the Interior. It remained there until it was made an office of the Federal Security Agency in 1939. The Office of Education later came to form part of the Department of Health, Education and Welfare. In 1979, the Department of Education was re-established and its Secretary became a member of the President’s Cabinet. Other government departments also represent federal policy in education. These departments include the Department of Health and Human Services, the Department of Agriculture, the Department of Defence, the Department of Energy, the Department of Labour, and the National Science Foundation.” (Valverde, 1995, p. 1,038).

## **Structure and organization of the education system**

Education in the United States is organized on three principal levels: the elementary (including pre-school and primary), the secondary, and the post-secondary. Vocational training is available at the secondary and post-secondary levels. In addition, formal and informal programmes of adult education and continuing education are offered widely to U.S. citizens in virtually any part of the country and throughout their lives.

Education is compulsory, beginning at age 5 in seven states, at age 6 in twenty-one states, at age 7 in eighteen states, and at age 8 in two states (data refer to 2000; for two states information was not available). Usually a person is required to attend school until age 16. Since 1989 there is a trend toward more states with mandatory school until age 18. In the year 2000, students were required to be enrolled in school to age 16 in twenty-eight states (thirty-five states in 1989), to age 17 in seven states, and to age 18 in thirteen states. Schooling is free, through completion of secondary school (Grade XII) for those who attend public schools.

## United States of America: structure of the education system



Source: U.S. Department of Education & NCES, 2001.

Note: The figure above indicates the most typical educational paths taken from preschool through graduate school.

For early childhood education, the stages shown are the following:

- Nursery School (ages 3-4): 1-2 years duration.
- Kindergartens (ages 4-5): 1-2 years duration.

For elementary and secondary education (grades 1 through 12), there are four traditional paths. The path taken by a given individual will depend on the state, school district, or school in which that individual is studying. The stage variations are the following:



## Variation 1:

- Elementary (or Primary) School (ages 6-13): 8 years duration.
- 4-Year High School (ages 14-18): 4 years duration.

## Variation 2:

- Elementary (or Primary) School (ages 6-9): 4 years duration.
- Middle School (ages 10-13): 4 years duration.
- 4-Year High School (ages 14-18): 4 years duration.

## Variation 3:

- Elementary (or Primary) School (ages 6-11): 5 years duration.
- Junior High School (12-14): 3 years duration.
- Senior High School (15-18): 3 years duration.

## Variation 4:

- Elementary (or Primary) School (ages 6-11): 6 years duration.
- Combined Junior/Senior School (ages 12-18): 6 years duration.

For postsecondary education, the stages are more generally represented in the following order:

- Vocational Technical Institutions; and Junior/Community Colleges.
- Undergraduate Programmes (Bachelor's Degree).
- Master's Degree Study.
- Doctor's Degree Study (Ph.D.); and Professional Schools (Medicine, Theology, Law, etc.).
- Postdoctoral Study and Research.

## Pre-school education

Elementary education includes one or two years of pre-school and one year of kindergarten. Most public school systems provide half-day kindergarten classes for children aged 5, and some provide pre-school classes for younger children, though most pre-school programmes are offered privately. An important feature of the increasing participation of young children in pre-primary schools is the increasing proportion in full-day programmes.

## Primary education

Although primary education may consist of six or eight grades, the six-grade school is most common. The main purpose of primary school is the general development of children from 6 to 12 or 14 years of age (depending on whether the school is a six- or eight-year elementary school). During the 1960s, the *middle school* gained widespread acceptance in U.S. education. A refinement of the junior high school, which was designed to improve the transition from elementary to secondary education, the middle school usually includes grades five or six through eight, provides team teaching and other innovative instructional methods, and emphasizes curricular exploration and growing independence for students. Its purpose is to serve the educational needs of students in the early adolescent period, those between 10 and 14 years of age.

## Secondary education

Secondary education begins at Grade VII or Grade IX, depending on whether elementary education in the system extends through Grade VI or Grade VIII. In some systems, junior high school follows elementary school, and includes Grades VII and VIII or VII-IX, followed by high school, which can include Grades IX-XII or X-XII. At this level of education, students normally complete Grade XII by age 17 or 18.



By the end of Grade X, most students have decided whether they will follow a primarily academic programme leading to further education at the college level, a vocational training programme leading to employment or specialized post-secondary training, or a general programme combining elements of both the academic and the vocational programmes.

All secondary programmes lead to the high school diploma and in most school districts are offered in the same comprehensive institution. A comprehensive institution offers a combined curriculum like the general programme, allows students to transfer easily from one programme to another, and provides flexibility for students to develop individual schedules to meet their own personal goals. It is not unusual for a medium-sized comprehensive high school to offer 200 or more separate courses. A comprehensive high school also provides the opportunity for young people with different career interests, as well as diverse social and economic backgrounds to have regular contact with each other. However, in recent years many school districts have introduced *magnet schools*, which are designed to attract students from all over the school district with a special interest in a particular area of study, such as science, the arts or languages. Thus magnet schools, while retaining economic and cultural diversity, deliberately sacrifice some curricular variety in order to achieve a more concentrated academic focus.

Vocational education typically begins at the secondary level and continues through the second year of the post-secondary level. Vocational programmes are also designed to retrain and upgrade the skills of adult workers in order to keep them current with the changing needs of the marketplace. These programmes are usually grouped under the seven traditional headings of vocational education: agriculture, marketing and distribution, health occupations, occupational home economics, business and office occupations, technical education, and trade and industrial education.

Certain programmes logically continue from the secondary to the post-secondary level. These include office occupations, marketing and distribution education, health occupations, and other non-technical programmes. Because of the academic foundation required at the secondary level, technical education usually begins with post-secondary schooling. However, some special-purpose high schools and large vocational/technical schools offer technical programmes at the secondary level. Generally, a two-year post-secondary programme is required for minimal competency in any of the physical sciences. If the post-secondary programme permits, at this point a student may choose to terminate his or her technical education and transfer credits to study at a four-year college or university. Thus, among institutions that offer technical programmes, there is a logical progression from subprofessional to professional technical occupations.

High school graduates who decide to continue their education may enter a technical or vocational institution, a two-year college, or a four-year college or university. A two-year college normally offers the first two years of a standard four-year college curriculum and a selection of terminal-vocational programmes. Academic courses completed at a two-year college are usually transferable for credit at a four-year college or university. A technical or vocational institution offers post-secondary technical training leading to a specific career.



An associate degree requires at least two years of college-level work, and a bachelor's degree normally can be earned in four years. At least one year beyond the bachelor's is necessary for a master's degree, while a doctoral degree usually requires a minimum of three or four years beyond the bachelor's. Some institutions have post-doctoral programmes for advanced study, generally based on an individualized study or research plan.

Professional schools differ widely in admission requirements and in programme length. Medical students, for example, generally complete a four-year programme of premedical studies at a college or university before they can enter the four-year programme at a medical school. Law programmes normally require three years of coursework beyond the bachelor's degree level. (See: U.S. Department of Education & NCES, 2001).

At the primary and secondary levels, the academic year usually begins in September and continues through the first or second week in June, though some school districts prefer to begin and end the school year earlier. In 2002, thirty-four states require a school year of 180 days, and eight states require between 175 and 179 days. In the same year, thirty states require five or more hours per day from elementary through high school. In Grades I-VI, thirty states require at least five hours per day, while those same hours are required in thirty-six states for Grades VII and VIII, and in thirty-four states for Grades IX-XII. All high school hours range from four to seven hours per day, with the exception of Missouri's policy which is three to seven hours per day and West Virginia's policy of 3.75 hours (see: CCSSO, 2002). In most instances, and particularly at the secondary level, students are given assignments to complete in the afternoon or evening, after the official school day has ended. Most classes are taught in English. However, in schools where there is a high concentration of students whose first language is not English, courses are sometimes taught in a foreign language until students are sufficiently conversant in English to enter regular classes.

At the post-secondary level, the academic calendar is much more flexible. The norm for a full-time student is two semesters of fifteen to sixteen weeks each per academic year, but many institutions vary this pattern. Some, for example, adopt a trimester system, which divides the academic year into three segments of fifteen to sixteen weeks; and others adopt a quarter system, with the school year divided into four eleven-week segments. In the latter two systems, the student normally does not attend school the entire year, but two out of three trimesters or three out of four quarters.

## **The financing of education**

Funds for education came primarily from taxes collected by state, local and federal governments. Public elementary and secondary schools receive virtually all of their revenues from government sources, mostly from the state or local school district. Until relatively recent times, local government has been the prime source of funding for elementary and secondary schools; but since 1978/79, revenues from state governments have slightly exceeded those from local governments. For example, in 1990/91, the federal government spent US\$6.7 billion on elementary and secondary education; state governments spent US\$43.6 billion; and local governments spent





US\$40.6 billion, with an additional US\$10.1 billion spent by private and other sources. With the increased role of the state in financing public elementary and secondary education, the proportionate share of funding by the federal government has correspondingly decreased, despite a steady increment of federal spending on education over the past two decades. The federal share of education costs tends to be greatest in states and localities with large numbers of disadvantaged children or with numerous federal installations.

The state share of revenues for public elementary and secondary schools had grown steadily for many decades, but this trend began to reverse in the late 1980s. Between 1986/87 and 1993/94, the state share declined from 49.7% of all revenues to 45.2%, while the local share rose from 43.9 to 47.8%. The federal share also rose slightly over this period, from 6.4 to 7.0%.

The expenditure per student in public schools rose significantly during the late 1980s, but there has been relatively little change during the first half of the 1990s. Between 1985/86 and 1990/91, current expenditures per student in average daily attendance grew 14%, after adjustment for inflation. From 1990/91 to 1995/96, expenditures per student increased by less than 1%. In 1995/96, the estimated current expenditure per student in average daily attendance was US\$6,213. Between 1995/96 and 2002/03, total expenditures per student in public elementary and secondary schools increased by 23% in constant dollars, from \$7,847 to \$9,630.

Federal funding for education showed sizeable growth between fiscal years (FYs) 1965 and 1996, after adjustment for inflation. Particularly large increases occurred between 1965 and 1975. After a period of small increases between 1975 and 1980, federal funding for education, excluding estimated federal tax expenditures for education, declined approximately 9% between 1980 and 1985, after adjustment for inflation. From 1985 to 1996, federal funding for education increased by 42%.

During the 1965 to 1975 period, after adjustment for inflation, federal funds for elementary and secondary education rose by 204%, post-secondary education by 256%, other education by 139%, and by 5% for research at educational institutions. Between 1975 and 1980, federal funding for elementary and secondary education rose by 1% and research by 14%, but post-secondary education fell slightly by 3% and other education fell by 35%. After declining 21% between 1980 and 1985, federal funding for elementary and secondary education programmes rose by 47% between 1985 and 1996. Post-secondary education fell by 24% between 1980 and 1985 then fell 7% between 1985 and 1996. Between 1985 and 1996, other education rose by 65%, and research by 27%, after adjustment for inflation.

According to FY 1996 estimates, US\$30.4 billion, or about 43% of the US\$70.9 billion spent by the Federal Government on education, came from the U.S. Department of Education. Large amounts of money also came from the U.S. Department of Health and Human Services (12.8 billion), the U.S. Department of Agriculture (9.1 billion), the U.S. Department of Labor (4.1 billion), the U.S. Department of Defense (3.7 billion), and the U.S. Department of Energy (2.7 billion). Fiscal year 1996 estimates call for federal programme funds for elementary and secondary education to be US\$35.2 billion; for higher education, 14.8 billion; for



research at universities and related institutions, 15.9 billion; and for other programmes, 4.9 billion.

Over 58% of total federal education support, excluding estimated federal tax expenditures, went to educational institutions in FY 1996. Another 19% was used for student support. Banks and other lending agencies received eight percent, and all other recipients, including libraries, museums, and federal institutions, received 14%.

Between FYs 1990 and 1996, U.S. Department of Education obligations rose 57%, after adjustment for inflation. Funds for student financial assistance increased to US\$ 30 billion in 1996, a rise of 127% since 1990. Funds for elementary and secondary education stood at an estimated US\$ 7.3 billion in 1996, a decline of 15% since 1990, after adjustment for inflation. Funds for the handicapped increased by about 42%, to US\$ 5.9 billion, and funds for vocational and adult education declined 10%, after adjustment for inflation.

Of the US\$30.4 billion spent by the U.S. Department of Education in FY 1996, about 11.7 billion went to school districts, 5.0 billion to institutions of higher education, 5.3 billion to college students, and 4.0 billion to State education agencies. A portion of the remaining US\$4.5 billion went to banks to subsidize student loans. Thirty-three percent of public elementary and secondary school students in the United States received publicly funded free or reduced-price lunches in 1993/94. At public elementary schools, the participation rate was 39% compared with 22% for public secondary schools.

About 13% of all elementary and secondary school children received Title I services in 1993/94. Federally sponsored Title I programmes are designed to break the link between family poverty and low student achievement, particularly for children in schools with high concentrations of poverty. Children in rural areas (13%) and central cities (17%) were more likely to receive services than those in suburban areas (9%).

According to FY 2001 estimates, US\$36.8 billion or about 40% of the 92.8 billion spent by the federal government on education came from the U.S. Department of Education. Large amounts of money also came from the U.S. Department of Health and Human Services (19.5 billion), the U.S. Department of Agriculture (11.0 billion), the U.S. Department of Labor (5.6 billion), the U.S. Department of Defense (4.5 billion), and the U.S. Department of Energy (3.5 billion). Fiscal year 2001 estimates call for federal programme funds for elementary and secondary education to be US\$48.7 billion; for post-secondary education, 15.3 billion; for research at universities and related institutions, 22.8 billion; and for other programmes, 6.0 billion.

Expenditures for public and private education, from kindergarten through graduate school (excluding post-secondary schools not awarding associate or higher degrees), are estimated at US\$826.6 billion for 2003/04. The expenditures of elementary and secondary schools are expected to total \$511.2 billion, while those of colleges and universities are expected to total \$315.4 billion. The total expenditures for education are expected to amount to 7.5% of the GDP in 2003/04, about the same percentage as in the recent past.



## The educational process

Though federal law prescribes no standardized curriculum, the education programmes throughout the States generally include: English grammar; reading; writing; mathematics; science and the scientific method; U.S. history and government; art, music, health and nutrition; practical arts; physical education; geography; and foreign languages. Many schools are also beginning to teach the history, culture, and traditions of other nations and peoples. Some students also receive an introduction to the world of work, through programmes that promote career awareness.

State and local education authorities are responsible for determining and developing public school curricula. The Federal Government is expressly forbidden by statute from intrusion into curricular decisions. There is no national public curriculum at any level of education. In fact, the U.S. Congress carefully monitors federal assistance for curriculum development to assure that State and local control is maintained. However, the Congress has mandated that every school receiving federal funds must provide a programme designed to teach students that drug use is wrong and harmful. Also, the federal government sometimes funds curricular research and develops model curricula that State and local authorities may choose to utilize. In this way, the Federal Government exercises leadership without directly intervening in the affairs of the public school system.

Generally, states exercise their responsibility for public school curricula in five major ways: by establishing the graduation requirements for students within the state; by selecting the texts to be used in classrooms; by developing minimum-competency tests; by issuing state curriculum guides; and by providing technical assistance. For example, most states require that students take one or more social studies courses in the area of American history or the history of their particular state. Local school districts may add curriculum requirements of their own, such as local history or sex education.

Minimum-competency testing is a means by which the states may influence local curricula. This practice originated in the middle 1970s, and some form of minimum competency testing now exists in at least forty states. Initially, many states mandated that students meet a minimum standard of competency before receiving a high school diploma. Gradually, testing has been extended to the lower grades to monitor early progress. Now, states conduct minimum-competency testing at two or three stages of a student's education to pinpoint problems and to institute remedial help. Reading, writing, and mathematics are the three subject areas most commonly targeted for minimum-competency testing, typically in Grades III or IV; VI, VIII, or IX; and XI or XII.

States also influence local curricula by providing technical assistance, which is delivered primarily by State curriculum specialists in the various fields (e.g. the sciences). Among other activities, these specialists work with local district personnel individually, conduct regional and statewide workshops for groups, and organize the development of State curriculum guides (materials suggested but not mandated).



Despite the decentralized nature of American education, a certain pragmatic standardization of curriculum exists. First, the textbook is probably the greatest single determinant of curriculum, and many publishers have successfully established large markets among the nation's schools. Second, college and university entrance requirements strongly affect curricular decisions at the secondary level because local school authorities want their graduates to be readily admitted to institutions of higher education. In some cases, a high school's curriculum may be designed wholly or in large part to prepare students to enter college, even though the college-bound population may be only about 50% or 60% of the high school's student body. Third, national achievement and aptitude tests developed by private, non-profit organizations influence secondary school curricula.

By 2001, almost all states, plus the District of Columbia, had developed and put in place *academic standards* that described what students should know and be able to do in mathematics, language arts, science and social studies. Most states also now have *content standards* that describe the body of knowledge that all students should know, and *performance standards* that describe what level of performance is considered basic, proficient and advanced (the exact terms used vary by school system.) Despite significant progress in setting academic standards, debate often takes place over whether standards are too high, too low, clear enough or sufficiently relevant.

### Pre-primary and primary education

Kindergarten classrooms can be structured with specific areas for children to spend time in certain activities. These can include areas for writing, mathematics, science, computers, and play (i.e. solving puzzles and working with blocks). Nearly all kindergarten classrooms have reading, mathematics, and play areas. Almost 90% of kindergarten classrooms have a writing area, and about 67% have a science area. Public school kindergarten classrooms are more likely to have writing and mathematics areas than are private schools.

The reading instructional activities of full- and half-day public school kindergarten classes seem alike in some ways and different in others. Both types of classes spend about the same percentage of time on whole-class, small group, and individual activities. Both types of classes spend time each day on reading. The most commonly taught skills in both types of classes are recognizing the letters of the alphabet and matching letters to sounds. However, full-day classes are more likely to spend time each day on certain skills, including letter recognition, matching letters to sounds, the conventions of print, and vocabulary. Public school children who attend kindergarten for a full day make greater gains in reading over the kindergarten year than public school children who attend kindergarten for half of a day. (U.S. Department of Education & NCES, 2003).

The elementary education programme has as its goal to help students acquire basic skills, knowledge, and positive attitudes toward learning. Elementary schools emphasize the growth of the individual child and the relation of the child's progress to individual needs and abilities. Traditional subjects such as reading, writing and mathematics provide tools for learning; and the teacher helps children to recognize problems, work out solutions, and evaluate results. The tables below show the

recommended time allocations for elementary and middle or junior high schools in the State of Indiana at the beginning of the 1990s (no longer applicable):

**Indiana. Elementary education: recommended time allocations (1992)**

Subject area	Minimum weekly time allocated to each subject (in minutes)					
	I	II	III	IV	V	VI
Language arts	750	750	750	525	450	450
Mathematics	225	225	225	225	225	225
Social studies/citizenship	150	150	150	150	225	225
Science	150	150	150	180	180	180
Visual arts	60	60	60	90	90	90
Music	60	60	60	90	90	90
Motor skills development and health/safety education	105	105	105	–	–	–
Health and safety education	–	–	–	75	75	75
Physical education	–	–	–	75	75	75
Additional instruction in any of the above areas or instruction in foreign language, creative experiences, or practical arts	–	–	–	90	90	90
<b>Total weekly minutes (min.)</b>	<b>1,500</b>	<b>1,500</b>	<b>1,500</b>	<b>1,500</b>	<b>1,500</b>	<b>1,500</b>

Source: Indiana Administrative Code, 511 IAC 6.1-5-2 Elementary school curriculum.

Note: Repealed, effective 1 July 1993.

Each school corporation shall conduct at least 180 student instructional days for all students grades 1 through 12. A student instructional day consists of a minimum of five hours of instructional time (or 900 instructional hours per year) in grades 1 through 6 and six hours of instructional time (or 1,080 instructional hours per year) in grades 7 through 12. Instructional time is time in which students are participating in an approved course, curriculum or educationally related activity under the direction of a teacher. Instructional time includes a reasonable amount of passing time between classes within a single school building or on a single school campus. Instructional time does not include lunch or recess.

**Indiana. Middle school: recommended time allocations (1992)**

Subject area	Minimum weekly time allocated to each subject (in minutes)		
	(VI)	VII	VIII
Language arts	400	200	200
Mathematics	200	200	200
Social studies/citizenship	200	200	200
Science	200	200	200
Additional instruction, including remediation, in language arts, mathematics, social studies/citizenship, and science, which may include foreign language	–	200	200
Visual arts	50	50	50
Music	50	50	50
Practical arts, industrial technology education	100	100	100
Health and safety education	100	100	100
Physical education	100	100	100
Additional experiences in any of the above areas or other areas, such as foreign language, creative experiences, or performing arts classes	400	400	400
<b>Total weekly minutes (min.)</b>	<b>1,800</b>	<b>1,800</b>	<b>1,800</b>

Source: Indiana Administrative Code, 511 IAC 6.1-5-3 Middle or junior high school curriculum.

Note: Repealed, effective 1 July 1993.

The recommendations above were applicable in each grade 7 and 8, or each grade 6 through 8 in middle schools that include grade 6. If a middle school includes grade 9, the daily and weekly schedules shall be organized in a manner appropriate for the educational programme, provided the equivalent of at least 250 minutes per week are scheduled for each course offered. "Credit" means a minimum of 250 minutes of instruction per week for one semester, except in the case of basic physical education courses where one school year of instruction is required for one credit.

The table below shows the minimum allocated instructional time in grades K-6 recommended by the Wisconsin Department of Public Instruction for a six-hour school day:

**Wisconsin: grades K-6 recommended weekly time allocations for a six-hour school day**

Subject	Minimum weekly time allocated to each subject (in minutes)							
	PRIVATE	K(*)	1	2	3	4	5	6
Reading/English language arts <sup>(1)</sup>		30%	700	700	600	600	500	425
Mathematics		10%	250	250	250	250	250	250
Social studies		10%	125	150	175	200	225	250
Science		10%	100	100	150	150	175	250
Health		10%	75	75	100	100	125	125
Physical education		10%	150	150	150	150	150	150
Art		10%	90	90	90	90	90	90
Music		10%	75	75	75	75	75	75
Foreign language		–	–	–	–	–	100	100
Environmental education <sup>(2)</sup>		–	–	–	–	–	–	–
Computer literacy <sup>(2)</sup>		–	–	–	–	–	–	–
Career exploration & planning <sup>(3)</sup>		–	–	–	–	–	–	–
<b>Total instructional minutes</b>			<b>1,565</b>	<b>1,590</b>	<b>1,590</b>	<b>1,615</b>	<b>1,690</b>	<b>1,715</b>

Source: Website of the Wisconsin Department of Public Instruction (Last checked: June 2003).

Notes:

(\*) Up to one-third of each day in the kindergarten schedule may be reserved for pupils' self-selected instructional activities. The allocated instructional time recommendations presented in column K apply only to the portion of the schedule planned for teacher-directed activities. The time allocations for kindergarten are expressed in percentages to facilitate planning for various kindergarten schedules.

(1) Instruction specifically designed to strengthen reading and writing abilities should be integrated into other subject areas, such as health, science, and social studies.

(2) Environmental education should be integrated into grades K-12, with the greatest emphasis in health, science, and social studies. Computer literacy should be integrated into grades K-12.

(3) An introduction to career education and planning, through a one semester course or the equivalent in instructional time and course content should be provided in grades 5 to 8.

A report published in 1997 addresses the issue of time spent on core academic subjects—English/reading/language skills, arithmetic/mathematics, social studies/history, and science—by first to fourth grade elementary school teachers in the United States (see: M. Perie *et al.*, 1997). The data analyzed in this report come from the SASS, conducted by the National Center for Education Statistics in 1987/88, 1990/91, and 1993/94. SASS is: “a large and comprehensive dataset on elementary and secondary schools in both the public and private sectors in the United States. [It] uses a complex and random sample of schools stratified by state, sector, and school level that provides for representative estimates of (1) the nation and each affiliation for private schools and (2) the nation and each state for public schools. SASS includes separate questionnaires for private and public schools, school districts (public only), school administrators, and teachers. About four teachers were sampled from each school, although the number varied depending on the school size and sector (public or private).” (Perie *et al.*, 1997, p. 5).

In introducing the results of the study, the report notes that “recent concerns about the quality of American schools have brought national attention to how teachers spend the time they have in an average school day. Many have suspected that the

addition of a variety of activities at school has changed teachers' role, and, as a result, time spent on basic core academic subjects may have dropped. [...] If teachers could spend more time teaching these core subjects, many believe the country's education system could provide students with a better opportunity to learn the skills necessary to compete in the international business market." (*Ibid.*, p. 1).

The 1993/94 SASS data analyzed in the report show that "teachers in grades 1-4 spent an average of about 32 hours with students in school per week [...]. Public school teachers of grades 1-4 spent, on average, about 22 hours per week, or just over 4 hours per day, on core academic curriculum" (*ibid.*, p. 8). The percentage of school time spent per week on core curriculum by Grades I-IV teachers in the public sector by subject was as follows: English/reading/language skills, 33.9%; arithmetic/mathematics, 16.2%; social studies/history, 9.3%; science, 8.8%; all core curriculum, 68.2% (*ibid.*, p. 9). Assuming that the average length of the school year in the United States is 180 days (thirty-six weeks), we can estimate that public school teachers of Grades I-IV spent, on average, 792 hours per year on the core curriculum in 1993/94.

The following table shows 1993/94 SASS data for each individual state:

State	Length of school week in hours	Hours per week spent on core curriculum	Percent of time spent on core curriculum	Length of school year in days of instruction
Alabama	34.0	22.5	66.3	175
Alaska	32.2	21.3	67.2	180
Arizona	32.4	21.6	66.9	175
Arkansas	34.1	22.0	64.7	178
California	30.5	21.0	69.1	175
Colorado	33.1	23.1	71.5	172
Connecticut	30.9	22.2	72.0	180
Delaware	33.3	19.8	60.1	...
District of Columbia	32.4	19.8	60.1	180
Florida	31.1	21.4	69.1	180
Georgia	33.1	21.6	66.0	180
Hawaii	31.0	19.9	64.5	184
Idaho	30.4	21.9	73.4	180
Illinois	30.8	20.6	67.1	180
Indiana	32.7	22.6	69.1	180



Iowa	33.6	20.6	61.6	180
Kansas	33.0	21.9	67.6	186
Kentucky	33.2	22.8	69.4	175
Louisiana	33.1	23.1	70.0	175
Maine	30.8	21.1	68.8	175
Maryland	31.5	22.1	69.6	180
Massachussets	30.5	21.1	69.6	180
Michigan	30.6	21.3	69.5	180
Minnesota	32.2	19.8	61.8	...
Mississippi	34.7	24.9	72.7	180
Missouri	32.5	21.2	65.3	174
Montana	32.1	23.2	71.6	180
Nebraska	33.2	21.8	65.3	...
Nevada	31.1	22.5	72.2	180
New Hampshire	31.3	20.9	67.3	180
New Jersey	29.9	21.7	72.2	180
New Mexico	32.0	22.0	69.4	180
New York	31.3	22.2	71.5	180
North Carolina	32.1	21.5	66.3	180
North Dakota	31.5	21.2	67.6	173
Ohio	31.3	20.8	66.3	182
Oklahoma	32.5	20.8	64.3	180
Oregon	31.7	20.7	65.4	...
Pennsylvania	31.5	22.7	72.3	180
Rhode Island	30.0	22.5	76.1	180
South Carolina	33.2	21.2	63.9	180
South Dakota	33.3	21.9	66.1	175
Tennessee	33.9	22.8	67.6	180
Texas	35.3	23.2	66.3	187
Utah	31.9	21.7	67.7	180
Vermont	31.9	20.7	66.9	175



Virginia	31.9	21.5	67.6	180
Washington	31.6	20.6	65.3	180
West Virginia	33.3	23.8	71.5	180
Wisconsin	33.5	21.9	66.4	180
Wyoming	31.8	22.3	70.4	175
US average	32.1	21.7	68.2	180
American Samoa	...	...	...	180
Puerto Rico	...	...	...	180
Virgin Islands	...	...	...	180

Sources: Perie *et al.*, 1997, for SASS data (length of school week, hours per week spent on core curriculum, time spent on core curriculum). Concerning the length of school year in days of instruction, see: Web pages of individual states (*Administrative Codes, Education Codes, Statutes*) and CCSSO, 1998.

Focusing on data collected from a nationally-representative sample of teachers of first through fifth graders (N=553), another study extends the findings from previous research by providing (actual) time use throughout the entire school day, not just for core academic subjects. In particular, “we use data from teacher time diaries completed as part of the Panel Study of Income Dynamics—Child Development Supplement (PSID-CDS) to delve deeper into the question of how students spend their time at school. Exactly how do children spend their time in school? What type of activities do they engage in? Does it vary depending on student, family, or classroom characteristics?” (J. Roth *et al.*, 2002).

Overall, it was found that “the length of the school day for our sample in 1997 (6 hours and 30 minutes) was similar to students in the SASS in the 1993–1994 school year (6 hours and 24 minutes). Students in the SASS sample spent 68% of their day engaged in four core academic subjects. Similarly, students in the PSID-CDS devoted 65% of their day to academic subjects. [...] We found differences in students’ participation in academics, as well as recess and enrichment activities based on the demographic characteristics of the students, their families, and their classrooms”.

“Proposals for lengthening the school day or the school year to provide more time for learning stem largely from the untested but popular belief that more time would lead to higher achievement, presumably by allowing more time for the pursuit of academic topics. Although academic pursuits account for the bulk of children’s time in school, 35% of the school day is devoted to other activities. This may seem like a large portion of the day—2 hours and 10 minutes—particularly given the emphasis on strengthening American students’ academic performance. Some argue that this time is “wasted.” The “extras,” such as health, music, and art, and routine necessities, such as lunch, bathroom breaks, or recess, take too much time away from the true business of schools—training in academic skills. Others believe that schools do not have enough time to teach our students all they need to know to be successful in the twenty-first century; enrichment and extra activities are an essential part of the school day, according to this point of view”.



“The additional time available to students in school for longer days is not devoted entirely to increased time in academics. Instead, it is divided among different activities. Of the additional 66 minutes per day in school for students with the longest school day, 29 of the minutes (44%) were allocated to academics. The remaining time allowed an additional 12 minutes for enrichment activities (18% of the extra time), 7 minutes more for recess (11%), and 10 minutes extra for maintenance activities (15%). For this national sample of students, a lengthened school day provided greater opportunity for a well-rounded school day—extra time in academics, enrichment, and recess”.

“Our data illustrate the racial and economic inequality in America’s schools: poorer minority children do not have the same opportunities as richer White students. Although minority students had more time allocated to academic subjects, they had less exposure to recess and enrichment activities. One-third of the African American students had no recess, more than twice as many African American students as White students. Tougher standards, and the time on academics required to achieve them, might also explain the different amount of time devoted to enrichment activities for minority students. Three times as many African American students as White students did not engage in enrichment activities during the school day. The consequences, both developmentally and educationally, for a lack of exposure and engagement in the arts and physical education, may be substantial”.

“The content of the school day for African American students differed dramatically from that of White students. A larger number of White students’ experiences in school included exposure to enriching experiences, such as the creative arts and/or physical education, providing them with the opportunity to learn other skills and competencies needed for a productive and rewarding future. These “extras,” however, did not come at the expense of academic learning time, raising questions about the efficiency of the time devoted to learning academic subjects for non-White students. We found substantial variation in the length of the school day and how the school day was spent. Students in school for the longest day had 87 more hours per year to learn academic subjects—the equivalent of more than 13 additional full school days devoted to academics. Our research indicates that minority students, who attended school for less time each day than White students, did not receive less instruction in academic subjects. Instead, time devoted to recess and enrichment activities was reduced (or eliminated) to allow for comparable time in academics. Although minority students receive a comparable amount of academic instruction, it comes at a sacrifice of other important dimensions of their development.” (*Ibid.*).

Enrolment in elementary and secondary schools grew rapidly during the 1950s and 1960s and peaked in 1971. This enrolment rise was caused by what is known as the *baby boom*, a dramatic increase in births following World War II. From 1971 to 1984, total elementary and secondary school enrolment decreased every year, reflecting the decline in the school-age population over that period. After these years of decline, enrolment in elementary and secondary schools showed a small increase in the fall of 1985.

Pre-primary education (nursery and kindergarten schools) enrolment has grown substantially. Between 1990 and 2000, pre-primary enrolment of 3- to 5-year-



olds rose by 14%. In 1998, public schools enrolled 82% of 3 to 5 years old children in kindergarten. In the same year, 20% of the kindergartners were in classes with 15 or fewer pupils. The average class size for kindergartners in public schools was 20, while it was 18 for those in private schools. An important feature of the increasing participation of young children in pre-primary schools is the increasing proportion in full-day programmes. In 2000, about 53% of the children attended pre-primary school all day compared with 39% in 1990. Center-based early childhood care and education programmes include day care centers, *Head Start* programmes, preschool, nursery school, pre-kindergarten, and other early childhood programs. The percentage of pre-kindergarten children aged 3–5 who attended center-based programmes increased from 53% in 1991 to 57% in 2005. In the same year, enrolment rates in center-based programmes were higher for older children (ages 4 and 5) than for children age 3. About 70% of children aged 4 and 5 attended such programmes, compared with 43% of children aged 3.

Public school enrolment in kindergarten through grade 8 rose from 27.4 million in fall 1986 to an estimated 33.9 million in fall 2001. Enrolment in the upper grades (9 to 12) declined from 12.3 million in 1986 to 11.3 million in 1990, and then increased to 13.7 million in 2001. Public school enrolment in pre-kindergarten through grade 12 is projected to reach an estimated 48.3 million in fall 2005.

An estimated 3.39 million elementary and secondary school teachers (full-time equivalent) were engaged in classroom instruction in 2001. The number of public school teachers in 2001 was about 3 million and the number in private schools was estimated at 0.39 million.

During the 1970s and early 1980s, public school enrolment decreased, while the number of teachers rose. As a result, the student-teacher ratio fell from 22.3:1 in 1970 to 17.9:1 in 1985. After 1985, the number of students per teacher continued downward, reaching 17.2 in 1990. Between 1990 and 1995, enrolment rose slightly faster than the number of teachers, and the student-teacher ratio in public elementary and secondary school increased to an estimated 17.4:1 in fall 1995. In the same year, the student-teacher ratio was an estimated 19.1:1 in public elementary school and an estimated 16.7:1 in private elementary school. By 2003, the student-teacher ratio had decreased to an estimated 16.5:1.

States reported 94,112 public elementary/secondary schools in 2001/02. This was an increase of more than 11% over the 84,578 schools reported in the fall of 1991. Most of these were regular schools, those that offer a comprehensive curriculum and may provide other programmes and services as well. A smaller number of schools focused primarily on special education, vocational/technical education, or alternative programmes. Most local education agencies are those that are typically thought of as "school districts." Operated by a local school board, they provide instructional services for students and comprised 85% of local agencies.

In the 2001/02 school year, 91,380 public schools provided instruction to 47.7 million students in the United States. Five states (California, Florida, Illinois, New York, and Texas) each enrolled more than 2 million students in their public schools. At the other end of the size distribution, the District of Columbia and Wyoming reported fewer than 100,000 students. Among the 91,380 schools, 58% spanned the



primary grades, beginning with pre-kindergarten or kindergarten and going no higher than grade 8. The proportion of students who were enrolled in primary schools averaged 49% across all states, ranging from 42% in Alaska to 59% in the District of Columbia. Middle schools—those with grade spans ranging from as low as grade 4 to as high as grade 9—made up 17% of schools with students. High schools (low grade of 7 or higher, high grade of 12) accounted for an additional 19% of schools. Some 6% of schools had a grade configuration that did not fit into any of these three categories.

Primary schools tended to be smaller than middle and high schools. The average number of students in a primary school was 441 in 2001/02. Middle schools served, on the average, 612 students each, while the average-size high school had 753 students. There was considerable range in school size across the states. High schools ranged from an average of fewer than 300 students in Montana, North Dakota, and South Dakota to more than 1,500 students in Florida. Student-teacher ratios were higher in primary schools, which had a median number of 16.0 students for each teacher, than in middle or high schools, which had a median number of 15.7 and 15.1 students per teacher, respectively. (The median is the point at which half the schools had larger student-teacher ratios and half had smaller. Note also that student-teacher ratio is not the same as average class size, since not all teachers are assigned to a classroom.) The median number of primary students for each teacher ranged from a low of fewer than 13.0 in Montana, Nebraska, North Dakota, South Dakota, Vermont, and Wyoming to a high of 21.5 in Utah. (See: U.S. Department of Education & NCES-CCD, 2003).

Historically, the majority of children in first grade have been 6 years old, but the percentage of first-graders aged 7 years or older has increased, rising from 13% in 1972 to 22% in 1994. The increase is due to some combination of parents keeping children in pre-school or at home longer, children repeating kindergarten or first grade, and states and districts changing the minimum age for starting school.

## Secondary education

Though each state establishes its own public school curriculum, mandated requirements for high school graduation generally include: two years of mathematics, two years of science, four years of English, and three years of social studies. Students may elect the other courses they take, usually with the assistance of a guidance counsellor. Electives might include such subjects as art, music, foreign languages, and computers. Individual students may elect a programme of studies that exceeds the requirements, and many do. The number of hours in any given subject required for graduation varies from state to state.

The American high school is highly flexible, both in its academic offerings and in its vocational programmes. In a growing number of schools, academically gifted students can take several additional hours per week of advanced science or mathematics during their last two years of high school. In many instances, pupils taking advanced courses receive college or university credit. Most secondary schools offer some foreign language courses, most commonly Spanish and French.



After the ninth year, students usually select their own programmes, which must include a number of required subjects for all students. Then they choose a number of elective subjects from a range which varies according to the institution. The subjects elected are often chosen with a view to the admissions requirements of selective colleges and universities to which they wish to apply and the college level subjects that the student may wish to study. Candidates must accumulate a number of units or credits, each one of which consists of five forty-five-minute classes per week throughout the academic year, as well as a corresponding number of hours devoted to individual work. Candidates usually select for their last three years a major option consisting of three units and a minor option consisting of two units.

Performance during the academic year and the assessments of teachers are taken into consideration. Candidates obtain the high school graduation when they have accumulated the required number of units (usually fifteen to twenty). In certain states, state institutions of higher education are obliged to accept all holders of the secondary-school-leaving certificates. The secondary school-leaving certificate is awarded after twelve years of primary and secondary education. Patterns vary according to the region, but the most common ones are: eight years of primary followed by four years of secondary education; six years of primary followed by six years of secondary education; six years of primary followed by two three-year phases of secondary education; or six years of primary followed by two phases (two and four years) of secondary education.

At the secondary school level, some states have well-developed vocational education programmes with apprenticeships or work-based learning opportunities. Most public high school students in vocational education programs work in part-time situations jointly supervised by teachers and employers during their senior year (grade 12) of high school. These work experiences may be provided by the school or obtained independently by the student. Different types of work-based learning experiences can be offered, including internships, apprenticeships and mentoring. U.S. child labor laws limit the level and intensity of vocational instruction that can be provided to students under 18 years of age. As a consequence, most vocational and technical education or training—especially for licensed occupations—occurs at the postsecondary level.

“The United States has no official examination system to assess competency as a requirement for the high school diploma. Decisions concerning promotion of students from one grade to the next are made according to a variety of policies at the local school district level. There are a variety of private examination companies that administer tests that aid some colleges and universities in the selection of high school graduates for admission. However, not all institutions rely on such examinations to the same degree, and some not rely on them at all” (Valverde, 1995, p. 1039-40).

Many students who leave school before high school graduation return to take a General Educational Development (GED) test, a comprehensive examination of basic skills and knowledge taught in elementary school and high school. A certificate of success on the GED is often accepted as the equivalent of a high school diploma. In many cases high schools offer special short-term courses designed to prepare students to pass the GED test.



The drop-out rate among 16- to 24-year-olds (which counts GED recipients and special programme completers as graduates) suggest some improvements have been made over the past quarter century. Between 1968 and 1990, the dropout rate for 16- to 24-year-olds fell from 16.2% to 12.1%. Between 1980 and 2000, the dropout rate declined from 14.1% to 10.9%. The drop-out rate for 1995 was 12%, which is not significantly different from 1990. The drop-out rate statistic is based on the civilian non-institutionalized population, which excludes persons in prisons and persons not living in households. Comparisons of the number of public and private high school graduates with the 17-year-old population suggest that the proportion of young people earning regular high school diplomas has not increased over the past 20 years. At its highest point in 1968/69, there were 77 graduates for every 100 persons of 17 years of age. This ratio declined during the 1970s, falling to 71 in 1979/80. The ratio has risen slightly in the 1990s, reaching 72 in 1995/96. This indicator is not a graduation rate because many students complete their high school education through alternative programmes, such as night schools and the General Educational Development (GED) programme.

In October 1994, five percent of the students who had been in Grades X-XII the previous fall had dropped out from school during the year, or had failed to return in the fall. Drop-out rates were closely related to family income: two percent of students from high income families dropped out, compared to 13% of students from low income families.

The percentage of high school graduates enrolling immediately after high school has increased, from 49% in 1972 to 62% in 1994 (67% in 2004). Access to college has increased for high school graduates from families at all income levels, but enrolment rates still vary with income. In 2004, 49.6% of high school graduates from low income families went directly to college, compared to 79.3% of high school graduates from high income families.

### **Assessing learning achievement nation-wide**

“The United States has had a highly developed system for measuring student achievement, and this system has been used extensively in school systems, at state levels and at the national level for a variety of purposes. The purposes include general system monitoring, programme or policy evaluation, individual placement and certification, and diagnosis and remediation. For the most part, testing and assessment needs have been met by a set of commercial companies who develop, sometimes administer, score, and report results to clients. For the most part, many of these measures have been developed to assure that these processes can occur economically” (Baker & Linn, 1995, p. 201).

The norms of national achievement and aptitude tests tend to become accepted norms for achievement locally; and, consciously or unconsciously, teachers may begin to teach solely in preparation for these tests. Three tests are particularly influential.

One is the National Assessment of Educational Progress (NAEP), a periodic measurement of the skills and knowledge of representative samples of 9-, 13-, and 17-year-olds in reading, writing, mathematics, science, social studies, and other subjects.



NAEP's impact on curriculum is more indirect than direct; it is felt primarily through the many State assessment programmes that, though independently developed, are patterned after NAEP. "The NAEP was initially designed in the mid 1960s to provide dependable measures of the progress in student achievement in the U.S. on a periodic basis. [...] NAEP has undergone a variety of modifications during the quarter century since the first National Assessment was administered in 1969. [...] The early assessments reported results at the individual item level. [...] Starting in 1984 the NEAP results were reported in terms of scale scores for each content area" (Baker & Linn, 1995, p. 205).

Two other tests that have proven highly influential on curriculum are the Scholastic Aptitude Test (SAT, now the Scholastic Assessment Test) and the American College Testing Programme (ACT). The SAT is a test of vocabulary and reasoning skills that is taken by about 1.1 million students each year. The ACT is similar to the SAT but covers social studies and the natural sciences in addition to math and English. About 800,000 students take this test each year.

The NAEP has assessed students' knowledge in reading, writing, science, mathematics, and other subjects for more than twenty years. NAEP analyzes both short- and long-term trends. One short-term trend indicates that reading proficiency remained relatively stable for fourth- and eighth-grade students between 1992 and 1994, while scores for twelfth-graders decreased slightly. The average reading scores at ages 9 and 13 were higher in 2004 than in 1971. The average score of 17-year-olds in 2004 was similar to that of 1971. A long-term trend shows that average science proficiency among 9-year-olds was higher in 1992 than in 1970; among 13-year-olds, it was about the same in 1992 as in 1970; and among 17-year-olds, it was lower.

Mathematics achievement is assessed in three ways: through NAEP for 9-, 13-, and 17-year-olds; through the SAT and the ACT for college-bound high school seniors; and through the GRE for college graduates intending to continue their education. NAEP shows that average mathematics proficiency among 9- and 13-year-olds was higher in 2004 than in 1973, and among 17-year-olds, it was about the same in 1992 as in 1973 after declining in the late 1970s. Average scores on the mathematics section of the SAT fell somewhat during the 1970s, but rose during the early 1980s and early 1990s. The 2003 main NAEP assessment of states found that mathematics proficiency varied widely among public school eighth-graders in the 53 participating jurisdictions (50 states, Department of Defense overseas and domestic schools, and the District of Columbia). Overall, 67% of these eighth-grade students performed at or above the *basic* level in mathematics, and 27% performed at or above the *proficient* level.

Participation in the SAT examination has increased significantly, however. In 1995, 42% of high school seniors took the SAT, up from 32% in 1976. During the same period, the percentage of minority test-takers has doubled, rising from 15% to 31%. The SAT (formerly known as the Scholastic Aptitude Test) was not designed as an indicator of student achievement, but rather to help predict how well students will do in college. Between 1984/85 and 1994/95, mathematics SAT scores increased by seven points, while verbal scores fell by three points. Although considerable differences exist among students from different racial/ethnic groups, these differences narrowed between 1984/85 and 1994/95. Combined mathematics and verbal scores





for white students rose by only seven points compared with an increase of 22 points for black students and 34 points for Asian American students.

The percentage of graduating seniors who took the ACT has risen, from 32% in 1991 to 37% in 1995. The ACT composite scores, however, have not changed during this time period. GRE test-takers as a percentage of college graduates rose from 29% in 1980 to 35% in 1993. Also, GRE quantitative scores increased 45 points between 1973 and 1993, mainly due to a sharp rise in scores during the 1980s.

Although overall scores have changed little over the last two decades, NAEP shows that the large gaps in achievement between whites and minorities have narrowed somewhat. Blacks have improved relative to whites in mathematics and science. For example, in 1973, average mathematics proficiency scores for 17-year-old blacks and Hispanics were well below those for 17-year-old whites (40 and 33 scale points, respectively). Although the gap was still large in 1992, the mathematics proficiency scores for 17-year-old white students increased only two scale points between 1973 and 1992, and the scores for 17-year-old blacks and Hispanics increased 16 and 15 scale points, respectively. The same trend is evident in SAT mathematics scores between 1976 and 1995. Even though the mathematics scores of whites increased only five points over that period, those of blacks increased by 34 points and those of Hispanics by 10 to 16 points.

In 1994, NAEP also assessed history and geography achievement. U.S. history scores of whites and Asians were higher than those of blacks and Hispanics across all three grade levels, although the differences between the scores of blacks and whites and of Hispanics and whites were smaller in Grades VIII and XII than in Grade IV. In geography, at all three grade levels, males outperformed females; white and Asian students outperformed black and Hispanic students; and Hispanic students outperformed black students.

Students at urban fringe schools had higher average history proficiencies than those in central city or rural schools in Grade IV and Grade VIII. However, in Grade XII, there were no measurable differences between the scores of students in urban fringe schools and those in central city schools—both outperformed students in rural schools. Generally, students who spent more time watching television each day had lower average history proficiency scores. In Grades IV and VIII, students who watched three or fewer hours of television per day scored higher than those who watched four or more hours of television per day. In Grade XII, even watching one hour of television per day was associated with lower average history proficiency scores, as those who watched one or less hour per day had higher average proficiency scores than did those who watched two or more hours per day.

The geography assessment focused on particular places on Earth, spatial patterns on the Earth's surface, and physical and human processes that shape such patterns; interactions between environment and society; and spatial variations and connections among people and places. Overall, males had higher geography proficiency scores than females across all three grade levels. Fourth-grade students in the Central region outperformed those in the other three regions. In Grade VIII, students in the Northeast and Central regions had higher scores than those in the Southeast and the West. At the twelfth-grade level, students in the Southeast had



lower average scores than did those in each of the other regions. There is a strong positive relationship between average geography proficiency and parents' educational level. For example, eighth-grade students whose parents had a college degree scored an average of seven scale points higher than those whose parents had some education after high school but did not graduate from college, 22 scale points higher than those whose parents had only a high school diploma and 34 scale points higher than those whose parents did not complete high school.

The results of assessments in average writing achievement from 1984 to 1992 reveal a dramatic shift at grade eight. After declining between 1984 and 1990, average performance increased in 1992 beyond the original 1984 level. There were no significant changes in overall writing performance at grade eleven. At grade four there was an increase in performance between 1990 and 1992, countering downward fluctuations in the 1980s, so that performance was essentially unchanged between 1984 and 1992. Generally, the more students read for fun on their own time, the higher their reading scores were. Between 1992 and 1994, the percentage of twelfth-graders who reported that they never or hardly ever read for fun increased from 24% to 27%. Students who read eleven or more pages each day for school and homework had higher average reading proficiency scores than those who read less than five pages a day. Between 1992 and 1994, the percentage of twelfth-graders who read eleven pages or more each day decreased as did twelfth-grade reading scores. Students who watched three or fewer hours of television a day showed higher levels of reading proficiency than those who watched six or more hours each day. In 1994, 57% of fourth-graders and 59% of eighth-graders watched three or fewer hours daily, while 75% of twelfth-graders did so.

The average number of science and mathematics courses completed by public high school graduates increased substantially. The mean number of mathematics courses (*Carnegie units*) completed in high school rose from 2.6 in 1982 to 3.4 in 1992, and the number of science courses rose from 2.2 to 2.9. The average number of courses in vocational-technical areas completed by all high school graduates dropped gradually, from 4.6 units in 1982 to 3.8 units in 1992. As a result of the increased academic course load, the proportion of students completing the recommendations of the National Commission on Excellence (four units of English, three units of social studies, three units of science, three units of mathematics, and 0.5 units of computer science) rose from 2.7% in 1982 to 29.2% in 1992.

Because of the adoption in 1989 of National Education Goals, U.S. educational assessment has been increasingly designed to measure progress toward the achievement of each of these six original Goals. This new focus has alerted the public to specific weaknesses in the system and has provided them with preliminary information so that they can monitor improvement (or the lack of it) in these six areas of concern. The initial problem facing those responsible for monitoring the education system was the rapid but conscientious development of benchmark standards and measurements to use in assessing progress. In some areas, instruments such as the NAEP were already available. In other areas, more pointed and precise standards and tests had to be devised.

The Elementary and Secondary Education Act (ESEA) requires states to demonstrate that they have adopted challenging academic content and student



achievement standards for all children. Under the 1994 ESEA reauthorization, states were required to adopt content standards in reading and mathematics by the 1997/98 school year. The new reauthorization (No Child Left Behind Act of 2001) requires states to adopt science standards beginning in the 2005/06 school year. (States may adopt standards in additional content areas as they see fit.)

Student academic achievement standards must be aligned with the state's academic content standards and must describe at least three achievement levels: two levels of high achievement (proficient and advanced) and a basic achievement level. The Secretary of Education will review states' content and student achievement standards to ensure they are challenging and apply to all students. All states have standards in mathematics and reading or language arts except Iowa, which has district-level standards. Nearly every state (and the District of Columbia) has adopted science standards for elementary and secondary students. Iowa requires local school districts to adopt science standards, and in 2001 Ohio was in the process of developing new science standards.

State Title I plans require states to demonstrate they have adopted a single state-wide accountability system for defining "adequate yearly progress" (AYP) for all public school students (that is, a unitary system). Charter schools are included in the accountability requirements. States must define AYP so that all students improve their performance and achieve a state-defined "proficient" level within twelve years. Defining adequate yearly progress is left to states, but the law requires that AYP (i) be based primarily on academic indicators (for example, student performance on tests in reading or language arts and mathematics); (ii) be technically rigorous; and (iii) apply to school, district and state levels of progress. Further, AYP definitions must address the progress of specified subgroups of students. It will not be sufficient for schools to demonstrate school-wide progress if certain groups of students fail to make adequate yearly progress. For schools and districts to meet state AYP objectives, students in each subgroup also must meet those objectives (as long as there are enough students in each group to ensure reliable statistical analyses).

Beginning in 2005/06, states are required to test all students annually in grades 3-8 in mathematics and reading or language arts, with reasonable adaptations and accommodations for students with disabilities and English Language Learners. Science assessments must be developed and put into place by the 2007/08 school year and administered at least once during each of these grade spans: 3-5, 6-9 and 10-12. Students who have attended school for at least three years in the United States (excluding Puerto Rico) are required to take reading assessments in English, although school districts have discretion to make case-by-case decisions about assessing in other languages for up to two additional consecutive years. Results of mathematics and reading assessments will be the primary indicators of whether schools and districts have made adequate yearly progress. The law requires a common definition for measuring AYP both for Title I schools and schools state-wide, and specifies interventions to be used in the case of continued low performance.

State plans must demonstrate that school districts, beginning in the 2002/03 school year, will provide an annual assessment of English proficiency (measuring students' oral language, reading and writing skills in English) of all students who are English Language Learners. Implementation may be delayed for one year if the state



demonstrates exceptional or uncontrollable circumstances. States are required to participate in the National Assessment of Educational Progress (NAEP) every other year in grades 4 and 8 for reading and mathematics, beginning in the 2002/03 school year (until 2002, state participation in NAEP has been voluntary).

In 2003, the performance of U.S. 15-year-olds, as measured by the Program for International Student Assessment (PISA), in mathematics literacy and problem solving was lower than the average performance for most Organization for Economic Cooperation and Development (OECD) countries. Along with the scale scores, PISA also used six proficiency levels (levels 1 through 6, with level 6 being the highest level of proficiency) to describe student performance in mathematics literacy. In mathematics literacy, the United States had greater percentages of students below level 1 and at levels 1 and 2 than the OECD average percentages. The United States also had a lower percentage of students at levels 4, 5, and 6 than the OECD average percentages.

## Higher education

Post-secondary education in America is widespread and diverse. There are literally thousands of degree-granting universities, four-year colleges and two-year colleges. Some of these are funded by State or local governments, while others are funded by religious denominations or are privately endowed. In addition to these degree-granting institutions, there are also proprietary schools that offer specific vocational training. These proprietary schools are generally operated as businesses for profit.

Post-secondary institutions, both public and private, derive their authority to function and grant degrees from the state in which they are located. This authority is established in the State constitution or in laws passed by the legislature.

Nearly all institutions of higher education receive some form of financial support, either direct or indirect, from both State and Federal governments, though public institutions generally receive a substantially higher proportion of their budget from government funding. Other sources of income for both public and private institutions include: student tuition and fees, endowment earnings, and contributions from philanthropic organizations and individuals. Many public community colleges, particularly those drawing students from several school districts, receive the bulk of their public funds from separate community college districts established for this purpose. In a growing number of states, public community colleges receive more than half their funding from the State government.

Generally speaking, there are three main types of degree-granting higher-education institutions in the United States: the two-year community or junior college; the four-year undergraduate college; and the university. The university normally includes undergraduate as well as graduate and professional education. Each category has both public and private institutions. Two-year institutions offer terminal degrees (associate degrees) for two years of study or preparation for moving into the last two years of undergraduate study at a four-year college. Four-year colleges usually award undergraduate degrees for four years of study. However, a growing number of four-year institutions offer the last two years of undergraduate study and two years of



graduate work for a graduate degree, awarding both undergraduate and graduate degrees. Universities usually offer four years of undergraduate study and two to four years of graduate study, awarding undergraduate, graduate and professional degrees.

Higher education institutions may be classified according to the total number of degrees they conferred and the field in which the degrees were awarded. This classification divides such institutions into doctoral, comprehensive, general baccalaureate, and specialized institutions. Doctoral institutions are characterized by a significant level of commitment to doctoral programmes and considerable activity in them. Comprehensive institutions have a strong post-baccalaureate programme but do not engage in significant doctoral-level education. General baccalaureate institutions focus primarily on undergraduate baccalaureate education. The category of specialized includes professional and other highly-focused institutions.

The associate of arts (A.A.) or the associate of science (A.S.) degree is usually earned at a community or junior college upon completion of two years of study. In many instances, this degree represents the same level of educational achievement as completion of the first two years of a four-year college or university, and some students who have earned the associate's degree transfer to four-year institutions. Other students, especially those who have completed vocational training for a particular job, normally enter the work force as mid-level technicians.

The bachelor's degree normally requires four years of academic study beyond the high school diploma. In recent years, accelerated learning plans, credit by examination, or practical work experience, year-round study plans, and other innovations have enabled some students to complete the programme in fewer than four years. The two most common bachelor's degrees are the bachelor of arts (B.A.) and the bachelor of science (B.S.). The former normally requires more courses in the arts and humanities, whereas the latter usually places greater emphasis on the sciences. Other common bachelor degrees include the B. Ed. (bachelor of education), the B.F.A. (bachelor of fine arts), the B. Mus. (bachelor of music) and the B.B.A. (bachelor of business administration). The B. Arch. (bachelor of architecture) is often a five-year programme. The B.D. (bachelor of divinity) and LL.B. (bachelor of law) are professional degrees, usually requiring three years of study beyond a B.A. or B.S.

Master's degree programmes vary considerably among the institutions that award them. Masters degrees are awarded in many academic fields, but most are called master of arts (M.A.) or master of science (M.S.) degrees, or are professional degrees such as master of nursing (M.Nurs.) or master of social work (M.S.W.). Programmes leading to this degree usually require one to two years of advanced study in graduate-level courses and seminars. Frequently a thesis is required and/or a final oral or written examination. Requirements may differ not only from institution to institution but also from department to department within an institution.

The doctorate is considered the highest academic degree conferred in the United States. It attests to the ability of its holder to conduct original research of a high order. The most frequently awarded doctorate is the doctor of philosophy (Ph.D.). Others include the doctor of education (D.Ed.) and the doctor of divinity (D.D.). Since work at the doctoral level is often individualized, the specific requirements may vary widely. In general, however, the degree requires a minimum



of two years of course work beyond the master's degree level, success in a qualifying examination, proficiency in one or two foreign languages, and/or in an equivalent research resource (such as statistics) considered appropriate to a particular field of specialization, and completion of a doctoral dissertation that is normally intended to represent an original contribution to knowledge in the candidate's chosen field.

Included among first professional degrees are dentistry (D.D.S. or D.M.D.), law (LL.B. or J.D.), medicine (M.D.), theology (B.D. or M. Div., or Rabbi), veterinary medicine (D.M.V.), podiatry (Pod.D. or D.P.) or podiatric medicine (D.C. or D.C.M.) and pharmacy (D.Pharm.). The education prerequisite and length of study required for these degrees vary with the field of study. For example, in medicine most students, after receiving a bachelor's degree, complete four years of medical studies before receiving the M.D. degree. Subsequently, they often enter into three years of residency training in a specialty.

The many and diverse degree-granting institutions of higher learning in the United States comprise a broad spectrum of academic traditions, philosophies, and educational goals. More than half are private institutions originally established by special-interest groups for social, educational, or religious purposes. Accrediting agencies and associations help to maintain high educational standards and compatible practices among many different institutions. These organizations were established by the member institutions themselves or by professions and specialized vocational fields, and membership is voluntary. Federal and State governments also require the maintenance of certain standards as a condition for financial assistance. Moreover, the professional integrity of the teaching staff and the demands of the economy for qualified graduates motivate most institutions to monitor carefully the quality of their programmes.

State governments do not exercise direct influence on the curriculum of private or public post-secondary academic institutions. Curricular decisions are made most often within academic departments, and individual professors are responsible for the content of their courses. The institutions usually require that a student earn a given number of credits, often prescribing specific courses or areas of study as prerequisites for graduation. Many also require a student to take a specified number of courses in a major field of study before conferring a degree.

However, states can exercise indirect control over post-secondary academic institutions, both public and private, through their licensing authority. For example, through power delegated to professional licensing boards, states can require that professionals such as doctors, attorneys, engineers, and teachers complete a minimum number of courses from a specified list of academic or professional subjects to qualify for a license to practice.

Enrolment in degree-granting institutions increased by 17% between 1979 and 1989. Between 1989 and 1999, enrolment increased at a slightly slower rate (9%), from 13.5 million to 14.8 million. There was a slight decline in enrolment from 1992 to 1995, but it was overshadowed by large increases in the late 1990s. Much of this growth was in female enrolment. Between 1989 and 1999, the number of men enrolled rose 5%, while the number of women increased by 13%. Part-time enrolment rose by 2% compared to an increase of 15% in full-time enrolment. In addition to the



enrolment in accredited two-year colleges, four-year colleges, and universities, about 414,000 students attended non degree-granting, Title IV eligible, post-secondary institutions in fall 1999 (Title IV programmes, which are administered by the U.S. Department of Education, provide financial aid to post-secondary students). College enrolment hit a record level of 16.6 million in fall 2002.

During the 1994/95 academic year, 9,962 institutions offered post-secondary education. This included 2,244 four-year colleges, 1,462 two-year colleges, and 6,256 vocational and technical institutions. Institutions awarding various higher education degrees in 1993/94 numbered 2,182 for associate degrees; 1,847 for bachelor's degrees; 1,342 for master's degrees; and 472 for doctoral degrees. During the 2004/05 academic year, 4,216 accredited institutions (public and private) offered degrees at the associate degree level or above. These included 2,533 four-year colleges and universities, and 1,683 two-year colleges. Institutions awarding various degrees in 1999-2000 numbered 2,546 for associate degrees, 1,995 for bachelor's degrees, 1,499 for master's degrees, and 535 for doctoral degrees.

Enrolment trends have differed at the undergraduate, graduate, and first-professional levels. Undergraduate enrolment generally increased during the 1970s, but dipped slightly between 1983 and 1985. From 1985 to 1992, undergraduate enrolment has increased each year, rising 18% before declining slightly and stabilizing in 1993 and 1998. Graduate enrolment had been steady at about 1.3 million in the late 1970s and early 1980s, but rose about 31% between 1985 and 1999. After rising very rapidly during the 1970s, enrolment in first-professional programmes stabilized in the 1980s. First-professional enrolment began rising again in the 1990s and showed an increase of 11% between 1990 and 1999.

Despite the sizeable numbers of small colleges, most students attend the larger colleges and universities. In fall 1999, 40% of institutions had fewer than 1,000 students; however, these campuses enrolled only 4% of college students. While 10% of the campuses enrolled 10,000 or more students, they accounted for 50% of total college enrolment.

The student-staff ratio at colleges and universities dropped from 5.4:1 in 1976 to 4.8:1 in 1999. During the same time period, the student-faculty ratio dropped from 16.6:1 to 14.9:1. The proportion of administrative staff and other non-teaching professional staff rose from 15% in 1976 to 24% in 1999, while the proportion of nonprofessional staff declined from 42% to 32%. Approximately 2.9 million people were employed in colleges and universities in the fall of 1999, including 2.0 million professional and 0.9 million non-professional staff. About 44% of the staff were faculty or teaching assistants; 6% were managerial; 18% were other non-teaching professionals; and 32% were non-professional staff. In the fall of 2003, there were 1.2 million faculty members in degree-granting institutions, including 0.6 million full-time and 0.5 million part-time faculty.

Colleges differ widely in their practices of employing part-time and full-time staff. In fall 1999, 50% of the employees at public two-year colleges were employed full-time compared with 70% at public four-year colleges and 71% at private four-year colleges. A higher proportion of the faculty at public four-year colleges were



employed full-time (73%) than at private four-year colleges (59%) or public two-year colleges (35%).

College faculty generally suffered losses in the purchasing power of their salaries from 1972/73 to 1980/81, when average salaries fell 17% after adjustment for inflation. During the 1980s, average salaries rose and recouperated most of the losses. Since 1989/90, faculty salaries have been relatively stable. Average salaries for men in 1994/95 (\$51,228) were considerably higher than the average for women (\$41,369) and have increased at a slightly faster rate since 1980/81.

For the 2003/04 academic year, annual undergraduate charges for tuition, room and board were estimated to be US\$9,249 at public colleges and US\$24,636 at private colleges. Between 1985/86 and 1995/96, charges at public colleges have risen by 23%, and charges at private colleges have increased by 36%, after adjustment for inflation. Trend data show increases in the expenditures per student at institutions of higher education through the late 1980s and relatively small increases thereafter. After an adjustment for inflation at colleges and universities, current-fund expenditures per student rose about 16% between 1983/84 and 1988/89, but increased only 4% between 1988/89 and 1993/94.

Scholarships and fellowships rose more rapidly at public institutions than most other types of college expenditures. At public universities, between 1986/87 and 1996/97, inflation adjusted scholarships and fellowships expenditures per full-time-equivalent student rose 85% compared with 8% for instruction expenditures per student. At other public four-year institutions during the same period, scholarship and fellowship costs per student rose 109%, and the instruction costs rose by 2%. Another rapidly rising expenditure for public colleges during the decade was research, which rose by 26% per student at public universities, and by 36% at other public four-year colleges.

More people are completing college. Between 1989/90 and 1999/2000, the number of associate, bachelor's, master's and doctoral degrees rose. Associate degrees increased 24%, bachelor's degrees increased 18%, master's degrees increased 41%, and doctoral degrees increased 17% during this period. The number of first-professional degrees was 13% higher in 1999/2000 than it was in 1989/90. The number of first-professional degrees declined in the mid-1980s before increasing in the early 1990s.

Of the 1,399,500 bachelor's degrees conferred in 2003/04, the largest numbers of degrees were conferred in the fields of business (307,100), social sciences and history (150,400), and education (106,300). At the master's degree level (558,940 degrees conferred in 2003/04), the largest fields were education (162,345) and business (139,347). The largest fields at the doctoral degree level (48,378 degrees conferred) were education (7,088), engineering (5,923), biological and biomedical sciences (5,242), and psychology (4,827).

The pattern of bachelor's degrees by field of study has shifted significantly in recent years. Declines are significant in some fields such as engineering and mathematics. Engineering and engineering technologies declined 4% between 1989/90 and 1994/95, and then posted a further 7% decline between 1994/95 and





1999/2000. Computer and information sciences grew rapidly during the 1970s and mid 1980s, declined by 10% between 1989/90 and 1994/95, but then grew 48% between 1994/95 and 1999/2000.

About 77% of the students who enrolled in a four-year college in 1995/96 were still working on their degrees in spring 1998. About 4% of students had completed a certificate or degree and 18% were no longer working toward a bachelor's degree.

## Special education

“The Education for All Handicapped Children Act of 1975 [Individuals with Disabilities Education Act–IDEA] marked the entry of the federal executive branch into the area of special education. This Law requires all states to identify children with one of seven conditions (speech impairment, learning disability, emotional disturbance, mental retardation, hearing impairment, and orthopaedic/medical impairment) and provide them with special education. Children with disabilities are to be educated, whenever possible, in regular classrooms without separation from their nonhandicapped peers. When disabled children cannot be educated with other children, they are to receive instruction in hospitals, their homes, or in other public or private institutions at no cost to their parents. This law also provides for medical and transportation support services for special education programmes.

This legislation, by mandating that handicapped children be educated in the least restrictive environment possible, led to the practice of “mainstreaming.” Mainstreaming refers to serving handicapped children within the regular school programme, rather than placing them in special classes in isolation from their nonhandicapped peers.

There was a large increase in the number of special education students between 1978 and 1987 from 3.9 to 4.4 million. This rise is attributable to an increase in the number of students classified as “learning disabled.” Children are diagnosed as learning disabled if they present disorders in language development and communication skills that are not related to impairments of vision, hearing, or motor functions; or to emotional disturbances or mental retardation. Thus, a learning disability includes such conditions as minimal brain damage, dyslexia, and perceptual disorders” (Valverde, 1995, p. 1037).

The number of students participating in federal programmes for children with disabilities has been increasing at a faster rate than total public school enrolment. Between 1977 and 1994, the number of students who participated in federal programmes for children with disabilities increased 46%, while total public school enrolment decreased two percent. In 1993, students with disabilities receiving services in federal programmes equalled nearly 12% of all students enrolled in grades K-12. In 1992, males with specific learning disabilities represented 7% of total public school enrolment, while females with this type of disability accounted for only 3%. By 2003–04, some 6.6 million youth received IDEA services, corresponding to 14% of total public school enrolment. In 2001–02, some 1.3% of children aged 3–5 enrolled in



early education programmes received services through IDEA. The percentage of public school students aged 6–21 receiving services was about 12%.

During the 1991/92 school year, 95% of students with disabilities were taught in regular school buildings. Of these students, 95% of those with speech or language impairments were taught in regular classrooms and/or resource rooms compared to 12% of deaf-blind students. Fifty-nine percent of mentally retarded students were taught in separate classrooms in regular school buildings compared to four percent of students with speech or language impairments.

The percentage of disabled students identified as having specific learning disabilities rose twenty-four percentage points (from 22 to 46%), while the proportion identified as mentally retarded or with speech or language impairments each fell sixteen percentage points (from 26 to 10% and from 35 to 19% of the total, respectively).

The ratio of the number of students with specific learning disabilities per special education teacher serving them increased from 18 to 24 between 1977 and 1993. However, the ratio for all students with disabilities decreased over the same period; in 1977, there were 21 students per teacher, and in 1993, 16 students per teacher.

The federal programme Education for Children with Disabilities provides special services for about 4 million children with disabilities in elementary and secondary schools. It assists states to provide opportunities for education to students with disabilities. The goal is to ensure that all such children acquire basic academic skills and thus enhance their opportunity to participate fully in society and to share equally in its benefits. Funding was for \$4.6 billion in 1989 and an estimated \$5.2 billion in 1993.

## **Private education**

As mentioned, in the United States private schools are permitted to operate according to specific state licensing and accrediting regulations. The vast majority of private schools are coeducational and range from those designed to serve children with learning disabilities, to inner-city religious schools, to college preparatory schools with or without dormitory facilities.

Private schools are owned and governed by entities that are independent of any government—typically, religious bodies or independent boards of trustees. Private schools also receive funding primarily from non-public sources: tuition payments and often other private sources, such as foundations, religious bodies, alumni, or other private donors.

Choice is another defining characteristic of private schools: families choose private education, and private schools may choose which students to accept. In contrast, public school districts generally assign students to particular schools, and those schools usually accept all students assigned. However, public school systems are expanding school choice options through magnet and charter schools, open



enrolment, and similar offerings, and, in a few instances, through publicly funded vouchers. Families with sufficient financial resources have always been able to choose a public school by choosing where to live, but school choice options are also increasingly available for others. Thus, public school districts are sometimes selective about who attends specific schools, and families may have some choice within the public sector as well. The proportion of public school children attending a chosen school (rather than the school assigned by residence location) has increased in recent years. In 1999, for example, 16% of public school students in Grades I-XII attended a school the family had chosen, up from 12% in 1993.

In 1999-2000, approximately 27,000 private schools, with 404,000 full-time-equivalent (FTE) teachers, enrolled 5.3 million students (5.1 million in 2003-2004). These schools accounted for 24% of all schools in the United States, 10% of all students, and 12% of all FTE teachers. Private schools have maintained their share of total school enrolments throughout recent decades at roughly 10-11%, with growth rates parallel to those of public schools. Seventy-nine percent of all private schools had a religious affiliation in 1999-2000: 30% were affiliated with the Roman Catholic Church, and 49% with other religious groups. The remaining 22% were non-sectarian. Although Catholic schools accounted for 30% of the total number of schools, they enrolled 48% of all private school students.

On average, private schools have smaller enrolments, smaller average class sizes, and lower student-teacher ratios than public schools. The average private school had 193 students in 1999-2000, while the average public school had 535 students. Among private schools, 80% had enrolments of fewer than 300, compared with 29% of public schools. Private schools may be established specifically to implement a particular instructional approach, such as Montessori, or a specific curricular focus. Some public schools have adopted special approaches as well, but the public sector included a smaller proportion of such schools than did the private sector in 1999-2000 (20% versus 28%). However, public schools were more likely than private schools to offer many specialized programmes and courses. Among private schools, non-sectarian ones were the most likely to use a specific instructional approach (62%), compared with other religious (27%) and Catholic schools (7%).

Teachers in private schools report that they have wide latitude in deciding how and what to teach, as well as a fairly strong influence on many school policies. Non-sectarian schools, in particular, may give teachers greater influence in shaping their school's activities. Achievement tests in reading, mathematics, and science show higher average scores for private school students. In addition, private schools tend to require more years of core academic subjects for high school graduation than do public schools, with some variation across school types. Graduates of private high schools have on average completed more advanced courses than public school graduates in science, mathematics, and foreign language. (See: U.S. Department of Education & NCES, 2002).

The average full tuition (highest tuition charged) for private schools was \$3,116 in 1993/94. Schools with religious orientation charged significantly lower tuition than nonsectarian schools. Students at Catholic schools paid \$2,178 on average, and students at schools with other religious orientations paid \$2,915 on average, compared with the average tuition of \$6,631 for non-sectarian private



schools. Mean tuition paid by private elementary school students was lower than that paid by other schools' students, with Catholic school students paying \$1,628. Students at schools with other religious orientations paid \$2,606, and students at non-sectarian schools paid \$4,693. Mean tuition paid by private secondary school students was substantially higher than that for private elementary school students, averaging \$3,643 at Catholic schools, \$5,261 at other religiously oriented schools, and \$9,525 at non-sectarian schools.

## **Means of instruction, equipment and infrastructure**

In 1990/91, 96% of all public schools and 87% of all private schools had libraries or media centers. About 59,000 librarians and 41,000 library aides provided service in public schools during the 1990/91 school year. There was an average of 931 students per librarian at public elementary schools, and 1,052 students per librarian at public secondary schools. At private elementary schools, there was an average of 636 students per librarian.

In 1993, there were 8,929 public libraries in the United States with 656 million books and serial volumes. The annual attendance per capita was 4.0 and the reference transactions per capita was 1.1. In 1998, there were 8,964 public libraries with 739 million books and serial volumes. The annual attendance per capita was 4.2.

The use of computers has become widespread in the workplace. In October 1993, 46% of all workers used computers on the job (50% in 1997). More frequent use of computers was associated with higher levels of education and higher incomes. Only 34% of the high school graduates (36% in 1997) and 10% of the high school drop-outs (12% in 1997) used computers, compared to 71% of those with master's degrees (79% in 1997). Among those who did use computers, the master's degree recipients were more likely to use the computers for a wider variety of applications than high school graduates. Elementary and secondary teachers were less likely to use computers than persons employed in other managerial or professional fields.

The total computer usage rate of students at school increased from 27% in 1984, to 59% in 1993, and to 69% in 1997. The rate for grades 1-8 increased from 52% in 1989 to 69% in 1993, and to 79% in 1997. The computer usage rate in 1993 was 58% for students in high school and 55% for undergraduate students in college (in 1997 the percentages rose to 70% and 65%, respectively). Sizeable percentages of students used computers at home, though fewer actually used them for schoolwork. About 25% of elementary school children used computers at home (43% in 1997) and about 11% used them for schoolwork (24% in 1997). Students at the high school and undergraduate level were about twice as likely as the elementary school children to use home computers for schoolwork. In general, students in higher income families were more likely to use computers at home and use them for schoolwork than were students from lower income families. In 1997, about 13% of the high school students in the \$15,000 to \$19,999 household income group used computers at home for school work, compared to 66% in the \$75,000 and over income group. In 2000, the average public school contained 110 computers. One important technological advance that has come to schools following the introduction of computers has been connections to the Internet. The proportion of instructional rooms with Internet access increased from



51% in 1998 to 77% in 2000. About 98% of schools had access to the Internet in 2000.

Data from 2003 show that about two-thirds of children in nursery school and 80% of kindergarteners use computers, and 97% of students in grades 9–12 do so. About 23% of children in nursery school use Internet, and this number rises to 50% by grade 3 and to 79% in grades 9–12. In contrast to the 1990s, when boys were more likely than girls to use computers and the Internet, overall computer and Internet use rates for boys and girls are now about the same. Overall, about 91% (53 million persons) of children aged 3 and over and in nursery school through grade 12 use computers, and about 59% (35 million persons) use the Internet. (See: NCES, *Computer and Internet use by students in 2003. Statistical analysis report*. September 2006.)

Total expenditures for college libraries rose by 30% between 1988/89 and 1993/94. However, the proportion of college budgets spent on libraries fell slightly from 2.4% in 1988/89 to 2.3% in 1993/94.

State officials select textbooks and other curricular materials in about half of the states. Local officials make the selections in the remainder. In either case, the State or local board of education usually delegates the responsibility to a textbook commission or committee made up of professional educators and community representatives. Most commonly, textbook commissions approve several textbooks and materials for each course, and local or school authorities make selections from the list. Usually teachers may choose a programme of study from approved materials.

Most textbooks are published by private firms, which usually contract with educators and other specialists to develop teaching materials; then they submit the final products to the State and local textbook commissions for approval. States and local school districts sometimes commission teams of teachers and other experts on curriculum to develop materials for use in classrooms. In some instances, universities develop curricular materials for use at the State or local level. Teachers are often given latitude to choose a programme of study from a variety of materials, sometimes from all of these sources.

In a situation where as few as four states may control almost 30% of the market (California 11%, Texas 8%, New York 6%, and Illinois 5%) publishers interested in selling to a broad market are likely to address the requirements of these key states, though their curricula sometimes are based on conflicting aims. In 1991, seven publishers controlled approximately 80% of the market (Valverde, 1995, p. 1039).

## **Adult and non-formal education**

“The federal government was not an important actor in the area of adult education until the passage of Title III of the 1965 Elementary and Secondary School Act. This title, called the Adult Education Act, created a partnership between each state and the federal government. The purpose of this partnership is to originate adult education programmes to help adult learner overcome English-language proficiency limitations



and improve basic educational skills in preparation for occupational training, further education, or responsible citizenship.

Adult and non-formal educational initiatives are also co-ordinated through the 1991 National Literacy Act, which is also notable for its provision of a United States national definition of “literacy” as the ability to read, write, and speak in English; and to compute and solve mathematical problems at levels of proficiency necessary to function on the job and in society, to achieve a person’s goals, and to develop a person’s knowledge and potential.

There are also a variety of public alternative schools that offer subject matter or employ pedagogical techniques that are not generally offered to students in traditional school settings. These alternative schools include *schools without walls*, schools within schools, continuation schools, multicultural schools, and fundamental schools.

*Schools without walls* offer community-based programmes in a variety of public and private buildings. Schools within schools are specialized programmes within existing public elementary and secondary schools. Continuation schools offer programmes especially designed to help public schools dropouts, pregnant teenagers, teenage parents, and other high-risk students continue their educations. Multicultural schools offer programmes that emphasize cultural pluralism and human relations. Fundamental schools offer conservative academic programmes in contrast with the more liberal and experimental nature of most public alternative programmes” (Valverde, 1995, p. 1037-38).

A 1992 study tested the performance of U.S. adults on three scales of literacy (prose, document, and quantitative) and categorized adults into five literacy levels according to their test scores, with level one being the lowest literacy level and level five being the highest. In September of 1993, the National Adult Literacy Survey (NALS) released the first nationally representative data on the literacy skills of the nation’s adults (aged 16 and older). Data included types of literacy skills, levels and how these skills are distributed across the population. Basic arithmetic skills were also tested. The results indicated that some 90 million adults (about 47% of the U.S. adult population) demonstrate low levels of literacy.

Unemployment rates are especially high for workers in the two lowest levels of literacy (levels one and two) on each of the three literacy scales. For these workers, the unemployment rate ranges from 12% for workers with level two quantitative literacy to nearly 20% for those with level one. Unemployment rates for individuals in the two highest literacy levels (levels four and five) are less than 6%.

Workers with high literacy scores earn more than other workers, on average. On the prose scale, for example, full-time workers in level three earn a mean weekly wage that is 51% higher than that of their counterparts in level one. Those in level five earn a weekly wage that is nearly 80% higher than the wage of those in level three.

Forty percent or more of the adult labour force performed at the two lowest levels on each of the literacy scales, suggesting that many workers lacked the skills needed to interpret, integrate, and compare or contrast information using written



materials common to the home or workplace. These workers appear to be unable to perform the types of tasks typical of certain occupations that demand high skills, such as professional, managerial, technical, high-level sales, skilled clerical, or craft and precision production occupations. Five percent or fewer of the U.S. labour force participants scored in the highest proficiency levels, demonstrating an ability to perform well on a wide array of literacy tasks.

The literacy of the U.S. adult population is, on average, roughly similar to that of populations in other industrialized countries, but the United States has a greater proportion of adults at the lowest literacy levels.

Forty-four percent of adults participated in adult education activities in 2005, up from 32% in 1991. Of those adults who participated in 2005, about 27% took work-related courses, 21% took personal development courses, and 5% took courses related to a diploma, degree, or certification.

## **Teaching staff**

All pre-service teacher education in the United States is at the post-secondary level. Many public and private universities have departments, schools, or colleges of education. In addition, a few institutions in the United States specialize exclusively in preparing educators to teach special subjects such as music and art, or to give instruction to severely disabled persons.

In most cases, candidates for teacher education programmes must have successfully completed one or two years of general undergraduate requirements. The minimum requirement for teaching on the elementary and secondary level in any of the fifty states is the bachelor's degree. However, an increasing number of states are meeting the growing demand for qualified instructors by instituting "alternate certification programmes," which sometimes allow candidates with special qualifications to take a lesser number of education courses before entering the classroom.

While most teacher training occurs in four-year programmes, some schools, colleges, or departments of education (SCDEs) offer five-year programmes, some leading to a master's degree. In most programmes for elementary school teachers, the core curriculum of professional studies devotes slightly more time to theory than to method, while in programmes for secondary school teachers the reverse is true. Despite an ongoing debate on the relative value of theory and method, most programmes include both in all education courses.

All states require that programmes to educate teachers include general education, specialization in a teaching field, and professional education courses. The general education programme usually includes a foundation in the liberal arts, with an emphasis on the humanities, natural sciences, and social sciences. In addition, all states require that future teachers engage in full-time teaching in a public school classroom under the supervision of an experienced teacher, approved by the college or university in which the candidate is enrolled.



In each state an agency regulates the certification of teachers. This agency issues a certificate or license to teach once all State requirements have been met. States issue several types of certificates, based on training and need: permanent (regular), probationary, and temporary, with the specific nomenclature varying from state to state. Many states require that a teacher acquire a graduate degree within ten years. Often, states or local school districts offer salary increases and free tuition as incentives to pursue study beyond what is required.

Most U.S. school districts assist or encourage teachers at the elementary and secondary levels to continue their professional growth in one way or another. To this end, teachers often have the opportunity to attend formal courses and workshops that confront significant classroom problems or explore new approaches. Those that attract the most participants tend to focus on problems that affect large numbers of teachers, such as instructing handicapped children in regular classes, meeting the needs of children from low-income families, and providing bilingual and multicultural education.

Not only do higher education institutions provide these programmes, but many large school districts and several smaller ones sponsor workshops using their own staff, with or without outside consultants. Many districts have established in-service training centres, which often include a reference library, an audiovisual center, workrooms for developing instructional materials, and rooms for seminars or lectures. With increasing frequency, the control of teacher centres is being entrusted to the teachers themselves.

Other in-service opportunities available to teachers include: visits to other schools, availability of consultants for individual problems, and special days (often called in-service days) during which pupils are excused from school and teachers participate in special programmes designed to help them improve their understanding of problems and their classroom performance.

Many school districts encourage their teachers to participate in in-service education through a variety of strategies. They may: (i) require a prescribed number of courses before a teaching contract can be renewed; (ii) subsidize tuition fees at a university; (iii) increase the salary of teachers who earn higher degrees, complete a given number of credit hours or participate in other in-service activities; (iv) release teachers from classroom responsibilities and provide travel expenses to enable them to attend professional meetings; (v) approve sabbaticals; or (vi) legitimize release time during the day.

Teaching workload has several dimensions, including the amount of time spent working, the number of classes taught and the number of students in each class. The amount of time a teacher devotes to his or her job is partly self-determined, reflecting not only what the school requires or expects but also the teacher's efficiency, enthusiasm and commitment.

In the school year 1993/94, full-time public school teachers were required to be at school for an average of thirty-three hours per week to conduct classes, prepare lessons, attend staff meetings and fulfil a variety of other school-related responsibilities. The average was similar whether they worked at the elementary or





secondary level. In addition to the required time at school, a full-time public school teacher worked an average of twelve additional hours per week before and after school and on weekends. Teachers spent three of these hours in activities involving students and nine hours in other school-related work, such as grading papers, preparing lessons and meeting with parents.

Full-time public school teachers in rural/small town communities spent more time, on average, than those in other community types in activities involving students. And those in schools with relatively few low-income students (five percent or fewer students eligible for free or reduced-priced lunches) spent more time in activities involving students, and also more time on other school-related activities than did those in schools with more than 40% low-income students. On average, full-time private school teachers were required to be at school about an hour longer per week and spent about an hour more outside of school than their public school counterparts.

In the school year 1993/94, public school teachers had an average class size of 23.2 and taught an average of 5.6 classes per day (excluding those in self-contained classrooms). The corresponding averages for private school teachers were 19.6 and 6.0, respectively. Public school teachers in rural/small town areas had lower average class sizes than teachers in other community types, and those in the smallest schools (those with less than 150 students) had lower average class sizes than those in the largest schools (those with 750 students or more).

Scheduled salaries for teachers usually increase with education and experience. In the school year 1993/94, public school districts paid an average of \$40,500 at the top of their schedules. Among private schools with salary schedules (about two-thirds of all private schools), salaries were considerably less, starting at \$16,200 and rising to \$27,300. Regional differences in salary schedules were prominent, with public school districts in the Northeast paying the highest salaries, on average, and districts in the South generally paying the lowest salaries. The smallest school districts (those with less than 1,000 students) tended to pay less, especially at the higher steps of the salary schedule. Their average salary rate at the highest step on the schedule was \$36,500, compared to \$43,800 in the next largest district size category (1,000 to 4,999 students) and even more in larger districts.

Following a period of decline in the 1970s, public school teachers' salaries increased throughout the 1980s and into the early 1990s, reaching a peak in 1991. In 1995, the average salary for public school teachers was \$37,400, up 20% from \$31,100 (in 1995 constant dollars) in 1981. At least some of this increase can be explained by the aging of the teacher work force. For example, between 1981 and 1991, the median number of years of teaching experience increased from twelve to fifteen years. Adjusting for inflation, the average salary for beginning public school teachers increased 24% from 1980 to 1995. The average salary for public school teachers grew slowly during the 1990s, reaching an average of \$45,822 in 2002/03 (current dollars).

In 1992, teachers had literacy skills similar to those of many other college graduates, including private-sector executives and managers, engineers, physicians, writers and artists, social workers, sales representatives, education administrators, and registered nurses. However, they often earned less. The average annual earnings for



teachers (prekindergarten through secondary, public and private) employed full time were \$26,000 in 1991, compared to \$38,500 for all persons with a bachelor's degree who were employed full time.

In 1992, 79% of full-time faculty received earnings in addition to their basic faculty salary. The mean basic faculty salary was \$45,401, while the mean total earned income was \$56,597. Despite gains during most of the 1980s and early 1990s, the average salaries (adjusted for inflation) of faculty across all academic ranks were lower in 1994 than they had been more than two decades earlier.

In the school year 1993/94, the vast majority of full-time public school teachers participated in school- and district-sponsored workshops or in-service training, regardless of school level or community type. However, participation was a little higher at the elementary level than at the secondary level for public school teachers. Full-time public school teachers were most commonly supported in their professional development through released time from teaching or scheduled time for professional development activities. Other types of support included professional growth credits and reimbursement of tuition, fees or expenses. Private school teachers were less likely to receive professional growth credits and released time and scheduled time from teaching than were public school teachers, but they were more likely to receive tuition and/or fees than were their public school counterparts.

In 1998, virtually all full-time public school teachers had a bachelor's degree, nearly half (45%) had a master's degree, and 1% had a doctorate. The likelihood of a teacher having a master's degree varied somewhat by the school instructional level and the number of years of teaching experience. A higher percentage of teachers who taught at the high school level had master's degrees (55%) than did those teaching in middle schools (46%) and those teaching in elementary schools (40%). The likelihood of holding a master's degree increased with the number of years of teaching experience. Thus, teachers with three or fewer years of teaching experience were the least likely to have a master's degree (16%), compared with 31% of teachers with four to nine years of experience, 48% of teachers with ten to nineteen years of experience, and 62% of those with twenty or more years of teaching experience. (*Source: U.S. Department of Education, National Center for Education Statistics. Fast response survey system, teacher survey on professional development and training, 1998.*)

Most of the full-time public school teachers in 1998 were fully certified in the field of their main teaching assignment; that is, they had either a regular or standard state certificate, or an advanced professional certificate in the field in which they taught most often. Among teachers in general elementary classrooms, 93% had a regular or advanced certificate, 3% had a provisional certificate, 2% a probationary certificate, 1% a temporary certificate, and 1% had an emergency certificate or waiver.

The data indicate that teacher participation in professional development in 1998 was high: almost all of the teachers surveyed in 1998 (99%) had participated in professional development programmes in at least one of the listed content areas in the last twelve months.



In 1998, teachers were more likely to have participated in professional development activities that appear consistent with the emphasis of education reform to do things differently and better. Teachers were more likely to have participated in implementing state or district curriculum and performance and standards (81%); integrating educational technology into the grade or subject taught (78%); implementing new teaching methods (77%); doing in-depth study in the subject area of their main teaching assignment (73%); and using student performance acceptance standards (67%), than in other areas. About half had participated in professional development in classroom management and addressing the needs of students with disabilities.

The 1998 data indicate that participation in professional development programmes typically lasted from one to eight hours, or the equivalent of one day or less of training. The content area for which teachers were most likely to spend more than a day of professional development was in-depth study in the subject area of the main teaching assignment. However, although teachers typically need extended time to pursue research on in-depth studies, slightly more than half of teachers spent more than a day in professional training in this content area (56%). The areas in which teachers were least likely to spend more than a day of training were addressing the needs of students with disabilities (19%) and classroom management (22%).

The 1998 survey asked teachers to indicate if, when they first began teaching, they participated in a formal induction programme (e.g. a programme to help beginning teachers by assigning them to master or mentor teachers). Thirty-four percent of full-time public school teachers in the 1998 study indicated that they had participated in such a programme. The 1993/94 survey asked a similar question and found that 28% of full-time public school teachers had participated in an induction programme during their first year. Participation in an induction programme varied considerably by teaching experience. Newer teachers were more likely to have participated in an induction programme than were more experienced teachers, ranging from 65% of teachers with three or fewer years of experience, to 14% of teachers with twenty or more years of experience. The 1993/94 data showed similar findings, with less experienced teachers being more likely to have had a formal induction into teaching than teachers with more experience. Teachers with three or fewer years of experience were more likely to have participated in an induction programme in 1998 than in 1993/94 (65% compared with 59%), suggesting that there may be more emphasis on induction programmes in recent years.

## **Educational research and information**

“The Office of Educational Research and Improvement (OERI) is in charge of the administration of federal educational research programmes. Some of the agencies within OERI include the National Center for Education Statistics, Office of Research, Office for Programmes for the Improvement of Practice, and the Office of Library Programmes. The National Center for Education Statistics (NCES) surveys and compiles statistics on all levels of education throughout the United States. It collects data on enrollment, revenues, expenditures, quantity of schools, number of teachers and staff, graduation rates, and so forth. Each state education agency also reports to the NCES data on the educational systems that they are mandated to compile. Since



each state varies in the type of data it requires its education agency to collect, the NCES must expend considerable effort in assuring comparability of statistics.

The Office of Research (OR) funds and co-ordinates educational research projects, as well as performing policy-oriented research with its own staff. Research topics of special interest to OR include: teacher education, instructional leadership, post-secondary teaching, educational technology, student testing, and many others.

The Office for Programmes for the Improvement of Practice (OPIP) in charge of transmitting the results of research to teachers, school administrators, and other individuals and organizations involved in the practice of education. Through a variety of programmes, this office attempts to ensure that practitioners become aware of new and effective instructional and administrative techniques.

The Office of Library Programmes (OLP) is devoted to the enhancement of libraries and library services” (Valverde, 1995, p. 1040).

The activities of the OERI provide essential support for the improvement of American education. OERI-supported activities include the research and development programmes of the five National Research Institutes; the applied research, development, and technical assistance activities of the ten Regional Educational Laboratories; dissemination activities and the National Library of Education. OERI also support a number of direct grants programmes designed to advance or demonstrate nationally significant strategies for improving teaching and learning, especially through the use of technology and professional development for teachers.

The budget requested for OERI activities in 1998 was \$510.7 million, an increase of \$112.6 million over the 1997 appropriation. New investments in research and development would support field-initiated studies in the areas of early childhood education, curriculum and teaching, the achievement of elementary and secondary students, the education of at-risk children, education policy and finance, and post-secondary education and lifelong learning. OERI also would continue important new work, begun in 1997, related to improving teaching and student achievement in reading and mathematics. Most notable is the investment in educational technology, including support for challenge grants that would engage a variety of partners in designing and demonstrating powerful examples of the effective use of technologies to improve curriculum, teaching and student learning.

The 1998 request included an \$8.3 million or 15% increase in funding to support research and development activities of five national research institutes: the National Institute on Student Achievement, Curriculum and Assessment; the National Institute on the Education of At-Risk Students; the National Institute on Educational Governance, Finance, Policy-Making, and Management; the National Institute on Early Childhood Development and Education; and the National Institute on Post-secondary Education, Libraries, and Lifelong Education.

The institutes support university-based national research and development centres to carry out sustained, long-term research and development to address important education problems. The 1998 increase would support twenty-five



additional field-initiated studies so that approximately 100 studies would be underway across the nation.

The 1998 request included a \$16.3 million or 33% increase to support the activities of the NCES. NCES data are used by local, State, and Federal policymakers to gauge the effects of reforms and the return of investments in education, and to make decisions about educational policy and planning. The statistics programmes provide data to monitor reform and progress toward the National Education Goals and to support the research agenda of OERI. NCES is also planning to meet the statistical needs of the future with new technologies, training, data development and analysis, and methodological studies that will make it an even more efficient organization and its data more useful for parents and teachers, administrators, and policymakers. Increased funding in 1998 would support expanded data collection for the Early Childhood Longitudinal Study, including the addition of a birth cohort; a new longitudinal study on high school students; regular international assessments; and a new study of adult literacy. In addition, the request would provide infrastructure support for local school districts to update the Third International Mathematics and Science Study data for grades four, eight, and twelve; and would fund the National Assessment of Educational Progress (NAEP) reading assessments.

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## Web resources

[All resources in English. Last checked: October 2007.]

Federal Department of Education: <http://www.ed.gov/index.jhtml>

Links to State Education Agencies: <http://nces.ed.gov/ccd/ccseas.asp>

Links to U.S. universities and colleges: <http://www.utexas.edu/world/univ/>

Links to U.S. schools, colleges and libraries: <http://nces.ed.gov/globallocator/>

American Association of School Administrators: <http://www.aasa.org/>

Center for Education Reform: <http://www.edreform.com/>

Council of Chief State School Officers: <http://www.ccsso.org/>

Education Commission of the States: <http://www.ecs.org/>

National Association of State Boards of Education: <http://www.nasbe.org/>

National Center for Education Statistics: <http://nces.ed.gov/>

United States Network for Education Information:  
<http://www.ed.gov/about/offices/list/ous/international/usnei/edlite-index.html>

*For updated links, consult the Web page of the International Bureau of Education of UNESCO: <http://www.ibe.unesco.org/links.htm>*