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ABSTRACT

This annual report presents statistical information in a chartbook format on education indicators derived from studies conducted by the Center for Education Statistics and from other surveys and studies conducted within and outside the Federal Government. The first half provides indicators of the outcomes, resources, and context of elementary and secondary education. Outcome indicators are presented for student performance in general and for transitional skills at high school completion. Resource indicators cover fiscal, material, and human resources, while context indicators include student characteristics, aspects of the learning environment, perceptions of school teachers and the general public, and competency requirements for high school graduation and for teacher certification. The second half provides a similar set of indicators for postsecondary education. Outcome indicators include student achievement, trends in higher education attainment, degrees conferred, activities following graduation, and economic outcomes. Resource indicators focus on fiscal resources: expenditures per student, revenues, and Federal financial aid programs. Context indicators focus entirely on student characteristics: enrollments by type and control of institution, selected personal characteristics, and enrollment patterns by age groups and by ethnicity. Appended are supplementary tables and technical notes, a description of standard errors and their uses, sources of data, and a glossary. A complete index is provided. (TE)

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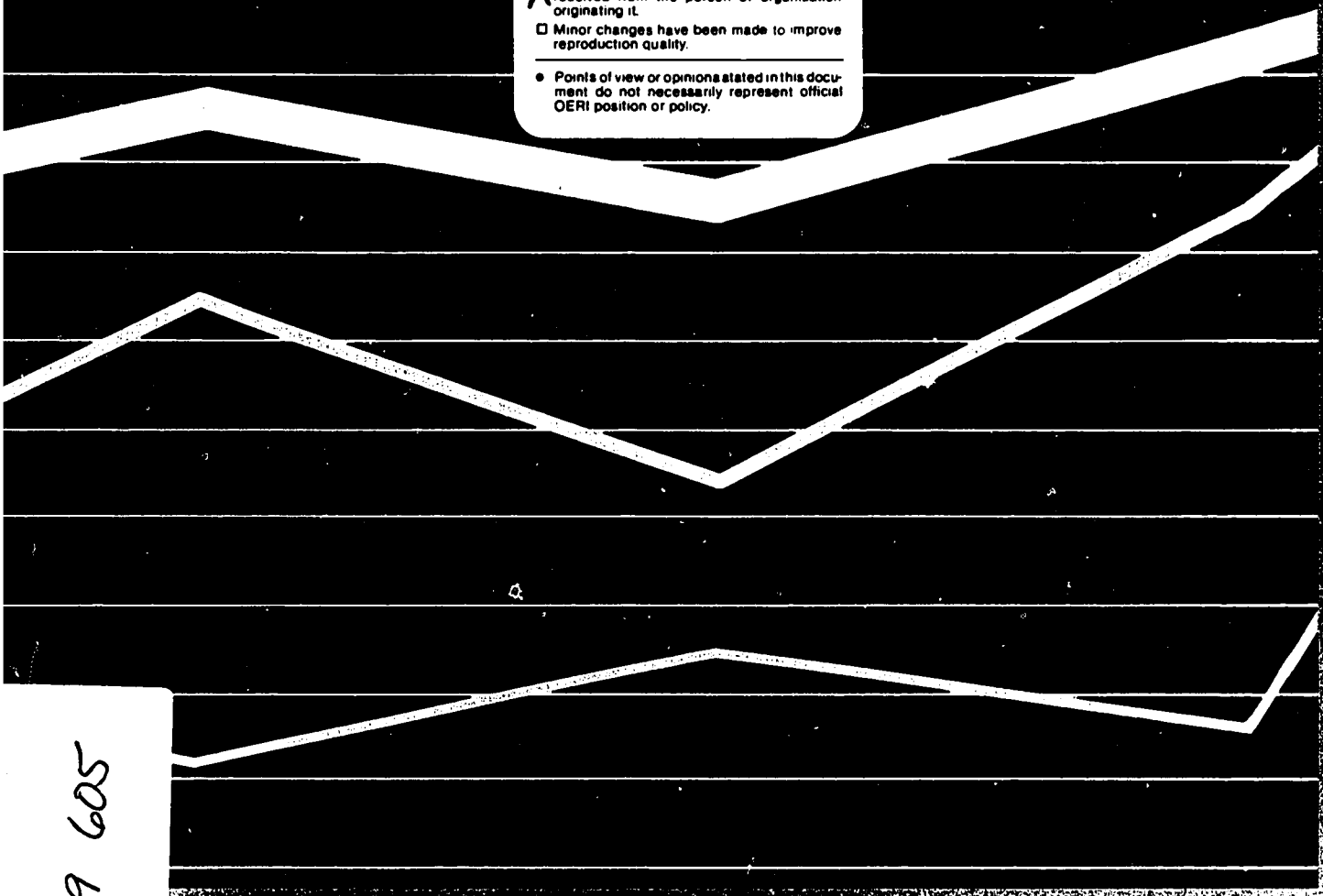

1987 Edition

Office of Educational Research and Improvement
U.S. Department of Education

Highlights

Elementary and Secondary Education

On a recent test of writing skills, on the average, students at all grade levels were unable to express themselves well enough to ensure that their writing would accomplish its intended purpose. Even in the 11th grade, average writing performance was only slightly above the *minimal* level. (Indicator 1:4)

According to a recent comparison of test scores in the American College Testing program (ACT) with course-taking patterns, students who had taken an additional course in a subject in most instances scored higher on the ACT test in that subject. (Indicator 1:7)

Although about 16 percent of the high school sophomore class of 1980 dropped out of school before obtaining a diploma, nearly 40 percent of those students had returned by 1984 and completed their high school education. (Indicator 1:9)

Black young adults, on average, performed significantly below white young adults on a literacy assessment conducted in 1985. These differences appear at each of four levels of educational attainment. (Indicator 1:10)

Contrasting 1979-80 and 1983-84 college graduates who became teachers, the proportion who had majored in education decreased. The number and proportion of newly graduated teachers who had majored in the social sciences, in communications, and in miscellaneous fields increased. (Indicator 1:19)

Examining the education levels and experience of public and private school teachers shows that private school teachers are less likely to have a degree beyond the bachelor's level and have less teaching experience than public school teachers. (Indicator 1:22)

Enrollments of minority students in this country are growing. However, in the largest public school districts, the proportion of minority students is much higher than in the Nation as a whole. For example, in 1984 one out of every four minority students in the country was enrolled in one of the 20 largest school districts. (Indicator 1:27)

The rate of cocaine use among high school seniors has more than tripled since 1975; in 1986, almost one out of every 16 high school seniors reported using cocaine in the month preceding the survey. (Indicator 1:31)

In a Gallup Poll assessing public school teachers' and the public's views on the importance of selected educational goals, nearly two-thirds of the public (64 percent) said developing standards of right and wrong was important. Only half as many public school teachers gave this goal the highest rating. (Indicator 1:34)

Graduation requirements in private high schools closely approximated the standards proposed by the National Commission on Excellence in Education for mathematics, English and social studies, but not for science. Public school graduation requirements in mathematics and science were considerably below those of private schools and the National Commission's recommendations. (Indicator 1:37)

The requirement to pass a competency test as a condition for obtaining a teaching certificate has been enacted by 44 of the 50 States, plus the District of Columbia. (Indicator 1:40)

Postsecondary Education

The proportions of the 25- to 34-year-old population attending and completing college increased substantially during the 1970's but were generally stable during the first half of the 1980's. In 1986, 46 percent of this population had attended college for at least 1 year and 24 percent had completed 4 or more years. (Indicator 2:2)

The number of associate degrees awarded rose 80 percent between 1971 and 1985. More than twice as many of these degrees are awarded in occupational fields as in the arts and sciences. (Indicator 2:3)

Paralleling trends in bachelor's degrees conferred over the last decade and a half, the distribution of master's degrees has shifted away from arts and sciences toward technical/professional fields, such as business and management. (Indicator 2:5)

Women increased their participation at all degree levels over the last decade and a half. The increase was especially dramatic at the doctoral and first-professional levels. In 1985, women received about one-half of all bachelor's and master's degrees and about one-third of all doctor's and first-professional degrees. (Indicator 2:6)

Two-year institutions grew rapidly during the 1970's and early 1980's, increasing their share of higher education enrollments from one-fourth to more than one-third. (Indicator 2:12)

Despite shrinkage in the number of 18- to 24-year-olds in the early 1980's, total enrollment in higher education increased 10 percent during the period. This was due to increased enrollment rates for 18- to 24-year-olds and increasing numbers of students aged 25 and older. (Indicator 2:14)

The Condition of Education

1987 Edition

Statistical Report
Center for Education Statistics

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Center for Education Statistics

"The purpose of the Center shall be to collect and disseminate statistics and other data related to education in the United States and in other nations. The Center shall. . . collect, collate, and from time to time, report full and complete statistics on the conditions of education in the United States; conduct and publish reports on specialized analyses of the meaning and significance of such statistics; . . . and review and report on education activities in foreign countries,"—Section 406 (b) of the General Education Provisions Act, as amended (20 U.S.C. 1221e-1).

September 1987

Director's Statement

The mission of the Center for Education Statistics is to collect and publish statistics and other information on the condition and progress of education in the United States. This mandate was set forth by Congress 120 years ago and continues to be the motivation for the activities of the Center today. The *Condition of Education* report is one of the primary ways the Department of Education disseminates such information, keeping both Congress and the general public informed.

This report presents information on education indicators derived from studies conducted by the Center, as well as from other surveys and studies conducted within and outside the Federal government. It employs a chartbook format to convey statistical information in a nontechnical way to a general audience.

This year the report includes more indicators on a wider array of topics than ever before. It presents new charts on student performance (including writing performance), resources in the schools, and quite a bit on student characteristics, including information on special education, and racial and ethnic composition for both elementary/ secondary and postsecondary schools.

The data upon which *The Condition of Education* are based come from a variety of sources. In particular, the volume draws upon the Center's ongoing statistical program, which includes the annual surveys and State summaries of public school statistics and the annual higher education surveys; sample surveys of public and private schools; recurring sample studies of recent college graduates; the longitudinal studies of students initiated at 8-year cycles; and the National Assessment of Educational Progress that reports on what students know and can do.

The Center is currently involved in a major design effort to develop an expanded and more valid database for elementary and secondary education. Working jointly with the Bureau of the Census, a series of linked surveys is to be conducted with administrators both at the school district level and in the schools, with teachers, with students, and with parents. The ultimate goal of the program is to provide more and more useful information on elementary and secondary education in this country, for both public and private schools.

The availability and quality of data on private schools continue to require special attention in Center studies. This edition of *The Condition* includes results of the 1985 Private School Survey. This survey gives more comprehensive data on private schools than was previously available and provides some comparisons between private schools and public schools.

This edition also has a substantial section devoted to postsecondary education. In particular, it offers a look at both the traditional measures of fiscal resources and student characteristics and new indicators on degrees awarded. Two new indicators present information on advanced degrees conferred by field and trends in degrees earned by women.

Other work continues within the Center to develop better databases for the series reported within this publication, and better indicators of the state of education within the United States. Work has begun on improved indicators for the supply of teachers at the elementary and secondary level, and on the persistence of students in 4-year universities. Future Center reports will benefit from the ongoing research to improve the quality of Center data and of models that describe causes and correlates of progress in education

Emerson J. Elliott

Acknowledgments

The Condition of Education, 1987 Statistical Report, was prepared in the Center for Education Statistics (CES), Office of Educational Research and Improvement (OERI), by the Condition of Education Division under the general supervision of Paul R. Hall, Division Director.

Joyce D. Stern had overall responsibility for the development and production of the volume. Marjorie O. Chandler coordinated the updating and data verification of continuing indicators. Mary Frase Williams offered critical assistance in defining and developing several new indicators and provided technical guidance throughout the process.

The following Condition of Education Division staff members worked on specific indicators: Janice S. Ancarrow, Lisa Avallone, Curtis Baker, Debra Gerald, Henry Gordon, Phillip Kaufman, David Orr, Audrey Pendleton, and Gayle Thompson Rogers. William Sonnenberg and Thomas Snyder provided valuable computer programming for the development of several indicators. Paul Horn and Debra Gerald prepared projection data. Carlyn Lucas and Carmelita Stevenson typed portions of the manuscript.

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Elsewhere in the Department of Education, staff from various offices helped in a variety of ways. From the Office of Student Financial Assistance, Office of Postsecondary Education, Robert Tuccillo provided special tabulations on student aid. Valuable reviews and suggestions for content and style modifications on the indicator describing trends in special education were provided by Lou Danielson, Martin Kaufman, and Jane Williams of the Office of Special Education Programs, and by Claude Le Tien from the Office for Civil Rights. He and Anne Yorke provided data on 1976 and 1984 elementary and secondary school enrollment by race. Dwight Crum for the Office of Private School Education made important suggestions on all elementary and secondary school indicators, while Ed Anthony and Charles O'Malley provided an important perspective on the public and private school enrollment indicator. Significant stylistic and format changes were made as a result of advice from Robert Barnes from the Office of Planning, Budget, and Evaluation.

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Charles Cowan, Chief Statistician, CES, offered valued technical guidance. For the perspective and original ideas they contributed throughout the development of the report, grateful acknowledgment is extended to Chester E. Finn, Jr., Assistant Secretary for OERI; Ray Fields, his special assistant; Bruno Manno, Chief of Staff, OERI; and Emerson J. Elliott, CES Director.

Note: These acknowledgments recognize those who gave assistance in the development of new indicators for this volume and in updating indicators repeated from the 1986 edition. Mention is not made of those who contributed to the initial development of continuing indicators and who were identified in the 1986 edition of this report.

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Introduction

Over the past 3 years, the Center for Education Statistics, in consultation with other agencies and organizations, has been evolving a set of indicators of education's status and progress. These indicators are intended to describe the "health" of the educational system so that the public and citizens who make decisions about the future of education in this country might be better informed.

It has been important to develop indicators for several reasons. First, a healthy educational system is critical to maintaining a viable economy. With the 1983 report of the National Commission on Excellence in Education, *A Nation at Risk*, the United States was awakened to the concern that our educational system was slipping into mediocrity. This situation threatens our position in the world economy and our ability to manage our own internal affairs. For the past 3 years, State and local entities have enacted many reforms to correct this situation. It is now imperative that we develop means to measure more accurately the success or failure of these reforms over the next few years as well as to keep abreast of the general progress in education.

Second, parents of students and the general public have a right and a need to know about the strengths and weaknesses of the schools in meeting the education needs of our children. American society makes a major effort to provide a free public education. An informed public is better able to understand, support or call for change.

Third, because we have a decentralized system of education governance, education decisions are made at Federal, State and local levels in both legislative and executive branches of the government and (at State and local levels) by elected or appointed school boards. Decisions are also made in thousands of privately governed schools and colleges, usually with little or no governmental intervention. The broadest dissemination of the best information is critical to debate and decision.

The purpose of creating a Federal education office in 1867 was to inform States to help *them* learn from each other. But it is clear that reporting must be standardized and comparable if data across States, schools and colleges are to be meaningful for both national aggregation and State-by-State comparisons. While States are free to identify indicators that reflect their particular goals, a national core of comparable data also needs to be collected. In education as in other fields, the Federal government is ideally positioned both to build consensus among data suppliers and users about suitable measures and common terms, and to collect and report the data.

Tremendous changes have occurred in society's ability to collect, store and process statistics. We can now handle more data than ever before, and in different, more responsive ways. Therefore, the rapid exchange and expanded use of information now has a greater potential for affecting decisionmaking.

Status of Indicator Development

The effort to develop education indicators was begun in the urgency of the moment—a practical response to societal need. As the Nation began to reform education in the early 1980's, the need for better, more timely and widely disseminated information became increasingly critical, especially at the State level. *A Nation at Risk* showed how important data can be in making people understand the nature of a social problem.

Most States followed the Federal Government's lead and established State-level commissions, task forces, or other groups to study and make recommendations about the quality of education in their States. Governors and State legislators, not just educators, began to ask for data—especially State-comparable data. When they did not obtain a response from their own education agencies, they would call upon other State offices, their national association offices, the U.S. Department of Education, or various regional or national education "commissions" in which they participated.

As a result of the pressure for information, the U.S. Department of Education began two parallel efforts in 1984 to identify indicators, to fill gaps in our information and to inform the Nation of our findings. These efforts produced the Secretary's "wall chart" that reports how States rank on a set of elementary/secondary education measures, and a concise publication in January 1985 called *Indicators of Education—Status and Trends*. Since that time, additional development of both elementary/secondary and postsecondary indicators has occurred. The Secretary's wall chart has become an annual publication, and the 1986 edition of the Department's *Condition of Education* report for the first time was predominately devoted to indicators.

These early efforts have been hampered by gaps in the data needed for indicators—for example, the lack of student achievement data representing the students of each State, and the lack of convincing evidence about which instructional practices or school activities would affect student achievement. In some cases, indirect or surrogate measures have been used in the absence of better data. However, considerable activity is underway in the Department of Education to improve the quality, timeliness and relevance of our data bases. We have continued to refine the original indicators, as well as discuss and debate the theoretical underpinnings of the indicators activity. One contribution

in this regard is a new publication* prepared in 1986 at the Center for Policy Research in Education, under the auspices of the Department's Office of Educational Research and Improvement. Entitled, *Educational Indicators: A Guide for Policymakers*, it describes the emergence of education indicators and their relevance to political decisions, and discusses the need to develop criteria for a "good" indicator.

The Council of Chief State School Officers (CCSSO) has initiated its own effort to develop and present State-level data for use in comparing States and also for informing State legislators, governors and State boards of education. In 1985, the CCSSO overwhelmingly endorsed a plan to begin this development and established a State Education Assessment Center to guide the effort. Similarly, many individual States have begun their own indicator systems and are regularly collecting and reporting State-level data.

Theoretical development has been slower, although it is beginning to capture more attention. At the last two annual meetings of the American Educational Research Association, symposia were held to discuss the evolving concept. In addition, the National Science Foundation has recently sponsored several projects to develop State-level science and mathematics indicators.

Uses of Indicators

Since *A Nation at Risk* was published, people concerned about education have been asking new kinds of questions. They have been asking not how big the education system is, but how well it is doing. Are children learning what is taught? How good are our teachers? Where are the weak spots? Such questions have guided the development of education indicators and have helped identify how they can meet the information needs of different audiences. For example, those working in the field note that indicators can be used to:

- Track changes of both inputs and outcomes, e.g., student enrollment, test scores;
- Pinpoint strengths and weaknesses appearing within a system or structure, e.g., the reading performance of subgroups of the population;
- Compare the status of education among nations, States, and localities—not only to encourage improvements, but to make the experience of the successful available to the less successful;
- Guide reviews of policy and practice and monitor the effects of policy changes, e.g., to identify coursetaking patterns among high school students, report on requirement changes, and monitor the eventual effects of more stringent coursetaking patterns on outcomes;
- Forecast future directions and needs, e.g., the future demand for teachers in key subjects;
- Assist State and local officials in setting education goals that children or the system should achieve, and serve as standards or benchmarks to be achieved over a given time.

The Future

Experts involved with developing indicators face significant problems. For example, adequate measures are lacking, forcing the need to use indirect measures. Until better, more comparable achievement data are available, existing tests, such as NAEP, SAT, ACT, and GRE reports, together provide general directions on outcome trends. Furthermore, additional outcome indicators, other than achievement scores, need to be identified that measure not only benefits of education to the individual but also to society at large. These issues are undergoing considerable discussion and activity that will continue for some time to come.

Another major challenge is determining the level of information to be collected and compared. Reporting can and does describe policies and other data about the Nation, the States, the regions, and local districts. However, at successively higher levels of aggregation, important differences are masked, and there is danger of misreading trends. On each indicator, decisions must be reached about the impact of aggregation on its value.

There is no doubt but that reporting of indicator data can create pressures on the policymaking system, in at least several ways:

- Individuals who support reforms may increasingly feel compelled to demonstrate that those reforms are having a positive impact;
- Educators are already asked more urgently to show positive results;
- Pressure on educators is coming from several sides to participate in selecting appropriate indicators and interpreting findings;

*Oakes, Jeannie, *Educational Indicators: A Guide for Policymakers*, Center for Policy Research in Education (U.S. Department of Education gram number OERI 6-86-0011), 1986.

- As the public becomes and remains more aware and better informed, it may regularly confront officials with calls to act on problems.

Responding to these pressures with sound data and timely reporting is essential to building a useful and efficient indicator system.

Efforts to explore models, systems, and purposes for indicators must continue. Only then can we refine a comprehensive and adequate set of measures to monitor and forecast the health of the education enterprise. In addition, the success of a given indicator over time in serving the purpose intended must be assessed and potential new sources of data regularly explored.

Elementary and Secondary Education Indicators

Researchers and policymakers do not universally agree on a model for education indicators. Nevertheless, they do share a basic understanding that any set of indicators purporting to describe the strengths and weaknesses of the country's education system must seek to address (a) the results of the educational enterprise; (b) the investment being made in education as measured by a number of indices; and (c) the environment in which schooling is taking place. Since the Department of Education issued its first report on education indicators in 1985, we have spoken of these three categories as "outcomes," "resources," and "context." The material which follows summarizes the elementary and secondary education indicators portrayed in this section.

Outcomes

Student performance: In the United States, no single test or series of tests is given to students at specified junctures in their education that would permit definitive statements about trends in their achievement results for a range of subjects. The several States administer a wide variety of tests, the results of which are not strictly comparable. The most representative and complete measure available on student performance is the National Assessment of Educational Progress (NAEP). Authorized by the Congress in 1969, NAEP periodically tests nationally representative samples of students in key subject and skill areas. However, NAEP has its limitations: sampling is currently inadequate for State-by-State comparisons; knowledge of particular subjects (e.g., science and writing) has been assessed infrequently; and while student knowledge is measured, what students are taught is not ascertained.

Several indicators reported in this edition are based on NAEP data. Without exception, NAEP results suggest considerable need for improvement by American students at all levels in the range of academic skills and disciplines.

Indicator 1:1 portrays the results of NAEP reading tests administered to 9-, 13-, and 17-year-olds on four occasions between 1971 and 1984. While improvements were registered between 1971 and 1984, large proportions of students at all three age levels in 1984 had not acquired the reading skills necessary to handle the academic material they would encounter in school.

For mathematics and science performance by children in these three age groups, data from the 1986 NAEP assessment were not available in time for publication in this volume. However, because these subjects are critically important for the future U.S. role in a changing world economy, the test results from 1981–82 and earlier have been depicted *(Indicator 1:2)*. For mathematics, only 13-year-old students showed any marked improvement in 1981–82 over the same age group tested in previous years, while performance in science for all groups declined steadily from the first assessment in 1969–70.

These deficiencies appear dramatically in *Indicator 1:3*, which offers international comparisons of mathematics performance by students in the 8th and 12th grades. Tests were conducted in school year 1981–82 under the auspices of the International Association for Evaluation of Educational Achievement (IEA). At both grade levels, U.S. students fell below the average performance of students from other developed countries participating in the testing program.

In 1984, NAEP assessed students in the 4th, 8th, and 11th grades for their skills in writing *(Indicator 1:4)*. Three types of writing were evaluated: "informative" (sharing knowledge); "persuasive" (communicating different points of view); and "imaginative" (fiction writing). Writing skills measured by these tests were quite low. Only by 8th grade did the average score approximate the "minimal" level of 200. Eleventh graders showed little progress: their average score of 219 fell well below the 300 level designating "adequate" performance. Of course, as noted earlier, NAEP has its limitations as a data source for student achievement.

Another outcome gauge is the performance of students on pre-college tests—the SAT (Scholastic Aptitude Test) and the ACT (American College Testing) program—taken as part of the college application process *(Indicator 1:5)*. SAT scores, following a small rebound from 1982 to 1985 after a 17-year decline, held steady in 1986; ACT scores have not changed appreciably since 1974. To control for possible changes in the test-taking population, the trends for high-scoring youth as a percentage of high school graduates were examined *(Indicator 1:6)*. These trends generally parallel those in average SAT performance.

College entrance examination tests have certain limitations as indicators of outcomes. They are not taken by a representative sample of older secondary school-age youth, but only by college-bound students who elect to take them. Moreover, the proportion of students who take the tests varies widely among the States. Finally, whether these tests measure aptitude or achievement or both is a matter of ongoing debate.

Pointing to low NAEP scores and to SAT score declines,

the National Commission on Excellence in Education in 1983 blamed a curriculum that had become "diluted and diffuse." The Commission's association of curriculum with educational results is based on research as well as common sense. Indicator 1:7 presents findings from a recent ACT-sponsored analysis of course-taking patterns of students who took the ACT in 1985. The study showed that within every quartile of class rank, students who had taken more coursework in a subject area scored higher on the ACT subtest in the same subject.

Transitions: Outcomes of education are not limited to students' test performance, though that may be a central feature of any system of education indicators. Also significant is the degree to which students successfully transit through the education system and, at an age expected by society, obtain a high school diploma or its equivalent. Completing secondary school is important because of the high correlation between dropping out and a number of societal problems—including unemployment and criminal activity. *Indicator 1:8* depicts the rate of high school completion, by race and ethnicity. In 1985, the most recent year for which there are data, nearly three out of four 18- to 19-year-olds had completed high school. The completion rate rises another 10 percent for 20- to 24-year olds.

Indicator 1:9 provides another perspective on this issue by looking at the extent to which high school dropouts later complete their education. It offers an analysis by sex and race of high school sophomores in 1980 who left school but subsequently finished their schooling. By 1984, 2 years after the expected date of graduation, more than one of three dropouts had completed high school, either by earning a regular diploma or an equivalency certificate.

The problem of adult illiteracy in American society has long been a concern of policymakers. But defining and measuring adult illiteracy has perplexed researchers for many years. In 1985, NAEP assessed three facets of literacy skills of the young adult population aged 21 to 25: prose comprehension, document literacy, and quantitative literacy. *Indicator 1:10* profiles the average scores on these scales and on the basic NAEP reading scale by level of educational attainment and race. The results of the study redefined the problem: there is no widespread problem of illiteracy, but rather a serious problem of insufficient levels of literacy in the more complex tasks faced every day in modern life. Not surprisingly, adults with more education performed better on all scales. Moreover, the study also indicated that literacy skills continue to grow after high school—young adults surpass the scores of in-school 17-year-olds.

In today's modern society, a high level of knowledge and skills is required for an increasing number of jobs. These assets are commonly obtained in academic or specialized education after high school. *Indicator 1:11* depicts the results of a longitudinal study that examined the extent to which high school seniors from the class of 1980 have continued their schooling. A large percentage did enroll in postsecondary programs in the 3½ years following high school, though proportionately more private school than public high school graduates did so.

Resources

The education enterprise depends upon certain resources to educate the children and youth who attend the Nation's schools. These resources may be measured in terms of the finances targeted on education and in terms of the material and human resources which these funds purchase.

Fiscal resources: Three perspectives on fiscal resources are presented: expenditures per pupil; trends in public school revenues; and public school finance in relation to population and income. Each of these measurements shows that support for elementary and secondary public school education in this country has risen substantially during the periods presented. Per pupil expenditures in the public schools grew significantly in terms of both current and constant dollars *(Indicator 1:12)*. Even when adjusted for inflation, these expenditures rose by over 50 percent in the last 15 years.

Indicator 1:13 tracks the sources of these school funds and the shifts in the proportion of Federal, State and local contributions over time. In 1920, for example, localities provided 80 percent of the financial support for public schools. Today, the largest share is paid by the States. An index of fiscal support for the public schools has been developed based on the proportion of personal income that is directed to the public schools, taking into account the relative size of the school-age population. By this measure, support for public education has risen substantially over the years *(Indicator 1:14)*.

Material resources: Another resource designed to benefit students in elementary and secondary schools is the library media center. *Indicator 1:15* describes trends from 1958 to 1985 in the growth, staffing, and support for these centers in public schools. (Data on library media centers in private schools are available only for 1985.) Nonpersonnel expenditure data for recent years show an overall decline per school and per student. The decline is concentrated on funds for adding to the libraries' collection of books and other reading materials, while funds targeted for equipment, particularly microcomputers, increased between 1978 and 1985.

Human resources: Attracting and retaining high quality teaching staff has emerged as a prominent topic in the national debate. The indicators that follow portray a number of relevant concerns about teachers—including different ways of looking at their number and their compensation.

One issue affecting budgets and hiring practices concerns the kinds of staff employed in the school system. *Indicator 1:16* contrasts the changes in the number and proportion of teachers to total staff since school year 1959–60. The number of staff has grown dramatically in the last quarter century, from about 2 million to a little over 4 million. With the hiring of more administrators and a variety of support personnel to staff school buildings and central offices, the proportion of teachers to total staff declined in the period from 65 percent to 53 percent.

Another topic of debate concerns the number of students for whom a teacher should be responsible so that learning opportunities are optimized. This is usually measured either in terms of class size or pupil/teacher ratio. The pupil/teacher ratio is derived using the number of enrolled pupils and the total full-time-equivalent staff available to teach them (including art and music teachers who do not have regular classroom assignments, but excluding librarians and counselors who do not have classroom assignments). *Indicator 1:17* contrasts pupil/teacher ratios in public and private schools, by size and level.

Two indicators describing the hiring and availability of new teachers are included. *Indicator 1:18* projects through 1995 the estimated demand for new teacher hires in the public schools resulting from changes in enrollments and pupil/teacher ratios. The emerging need for new hires at the elementary school level will continue into the late 1980's but then decline in the first half of the 1990's. Meanwhile, the need for new hires at the secondary level will not begin to grow until the late 1980's as enrollments increase at that level.

One source of these new hires is recent college graduates. *Indicator 1:19* contrasts and describes graduates entering teaching for the first time following graduation in academic year 1981–82 and 1983–84. Among 1983–84 graduates, 11,500 fewer chose to teach. While those majoring in education dropped 25 percent during the period, education majors remained the largest source of new teaching graduates. However, their proportion dwindled. Eighty-two percent of those teaching for the first time following graduation in 1981–82 had been education majors. For 1983–84 graduates, the proportion dropped to 72 percent.

Regarding teacher compensation, *Indicator 1:20* shows that while in the 1970's the purchasing power of public school teachers' salaries actually declined, the situation is now dramatically changed. School systems throughout the country are raising teacher salaries. Indeed, between 1980–81 and 1985–86, teachers' salaries in the public schools increased 14 percent, adjusting for inflation. By contrast, the increase for all workers with 4 years or more of college was 10 percent. *Indicator 1:21* portrays teachers' income in a different way. It contrasts the earnings (not only salaries) of all teachers (in public and private schools) with those of all workers. It shows that while in the period 1982 through 1985 teachers earned considerably less than others in jobs requiring a college education, their position relative to other workers did improve, reflecting, in part, the salary increases just noted.

Indicator 1:22 profiles teachers in public and private schools, identifying their sex, race/ethnicity, highest college degree, and teaching experience. The findings show that in both systems, female teachers outnumber male teachers by a wide margin, and public school teachers are more likely both to have an advanced degree and to have been teaching 10 or more years. Teachers from both sectors report working a 50-hour week *(Indicator 1:23)* with about half that time spent in the classroom. The balance is spent on such activities as preparing lessons and grading student papers.

Context

Student characteristics: It is necessary for school officials and policymakers to possess basic information about students who attend school so that resources can be allocated and appropriate programs provided. Six indicators address this topic.

Indicator 1:24 describes trends in public and private school enrollment from 1970 to the present. For public schools, elementary level enrollment peaked in 1970–71 at 32.6 million, while secondary level enrollment peaked at about 14.5 million during the period 1975–78. The total public school enrollment was at its height in 1971 at 46.6 million but by 1985 declined to 39.8 million students. The enrollment of private school children as a percentage of total enrollment has been varied during the period. In the fall of 1985, it stood at 10.9 percent of all enrollment, the same as in 1970. Projections for enrollments in elementary and secondary public schools are provided in *Indicator 1:25.* The baby boom "echo" is expected to cause elementary enrollment to continue rising from 1985 through school year 1995–96. Secondary level enrollment should continue decreasing through 1990–91 and then begin rising again.

Another perspective on school enrollment is provided in *Indicator 1:26,* which presents information on selected age groups of students—essentially pre-schoolers, 5- to

6-year-olds, and 16- and 17-year-olds. It charts the stability in the enrollment of the latter group over time, while portraying the dramatic increase in school attendance by the very young.

The racial and ethnic diversity of American schools is shown in *Indicator 1:27*, which describes changes between 1976 and 1984. In this time, the proportion of minority students in the public schools rose from 24 percent to nearly 30 percent. This growth in minority enrollments was due primarily to decreases in white enrollment as well as to increases in the enrollment of Asian and Hispanic students. Moreover, minority enrollment is not uniformly distributed throughout the country. Some 16,000 school districts of varying sizes are operating, yet in 1984, significant proportions of minority students were concentrated in the largest school districts. For example, 1 out of every 4 minority students attended school in one of the 20 largest school districts, while those same districts enrolled only 1 of every 20 white students in the Nation.

Indicator 1:28 looks at one segment of the school-age population, those students receiving special education programs in 1978 and 1984. The proportion of students designated as being "specific learning disabled" and those classified as "gifted and talented" were each 4 percent of the total in 1984, about double the proportions in 1978. Other special education categories did not experience as great an increase in the period.

Learning environment: While schools are coping with new enrollment patterns and the challenges posed by students with special needs, other environmental challenges are present as well, some of them in the home and some of them in the schools. NAEP data reveal that in recent years, the amount of television children watch has increased. At the same time, the amount of reading material in homes has declined. *Indicator 1:29* displays data showing a strong relationship between limited television viewing, a considerable amount of reading materials, and high reading scores.

While the home environment can help or hinder the learning process, as measured by such things as reading scores, the school itself is central. Four indicators describing aspects of today's school environment have been selected. The first is on discipline. *Indicator 1:30* provides the results of a recent survey of public junior and senior high school principals, the majority of whom responded that students had reported thefts of personal items and school authorities had reported law violations to the police.

A particularly troubling example of student crime is substance abuse. *Indicator 1:31* presents data on a decade-long study measuring the prevalence of student drug and alcohol abuse. Among other results, the study found that the rate of cocaine use among high school seniors more than tripled since 1975.

Indicator 1:32 features a special analysis based on effective schools' research suggesting that certain environmental factors in elementary schools seem to promote learning. Adapting that research model to high schools and using original scales of teachers' perceptions of such variables as principal leadership and orderly environment, the indicator describes how Catholic school teachers more frequently reported a positive school climate in their schools than did public school teachers.

The satisfaction that teachers have with their jobs is presented in *Indicator 1:33*. Data show no change between 1984 and 1986 in the overall index of teacher job satisfaction. Of men reporting themselves as very or somewhat satisfied with teaching as a career, the proportion rose from 74 percent to 79 percent, while the proportion of women reporting that range of career satisfaction did not change significantly (81 percent and 82 percent in 1984 and 1986, respectively). However, the overall proportion who reported being "very" satisfied declined, while the overall proportion wanting to leave the profession increased somewhat.

Perceptions: Another set of context indicators focuses on perceptions about the schools. Two of these contrast the perspective of the public with that of teachers in the public schools. *Indicator 1:34* shows the degree to which the public and the teachers share views about the goals of education, while the next indicator *(1:35)* contrasts their perceptions of the problems facing the schools. Some salient disparities do exist. For example, the public puts a higher value on job-oriented education than do teachers. School discipline was the problem most cited by parents but it ranked fourth on the teachers' list. The remaining indicator *(1:36)* in this set depicts trends in the public's assessment of the schools and other major public institutions. Since 1983, the public's confidence in schools, as well as in some other institutions (such as Congress and the military), has risen.

Requirements: One consequence of the reform era is renewed interest in academic rigor. One place where this may be gauged is in the requirements schools set for high school graduation. The first indicator in this group *(1:37)* contrasts the requirements recommended by the National Commission on Excellence in Education with those currently in place at public and private schools in this country. Private school requirements were found to closely approximate the standard set by the Commission on Excellence in math, English, and social studies, but not in

science; public school standards were lower overall, but particularly in mathematics and science.

The final group of elementary and secondary indicators presents aspects of the increasing role of the States in today's reform era. *Indicator 1:38* shows the extent to which States since 1983 have been addressing the problem of a weak curriculum by increasing graduation requirements and demanding more units to be taken in language arts, mathematics, social studies, and science. Similarly, *Indicator 1:39* plots trends showing the States' increased use of competency testing for high school graduation. The concluding indicator for elementary and secondary education (*1:40)* shows how competency testing is being applied to teachers as well as students. The requirement to pass a competency test as a condition for teacher certification has been enacted by 44 of the 50 States, plus the District of Columbia.

Reading performance of 9-, 13-, and 17-year-old students

The National Assessment of Educational Progress (NAEP) is a Congressionally mandated project that periodically assesses knowledge, skills, and attitudes of the Nation's children and youth in various subject areas. Different learning areas were assessed annually beginning in 1969–70 and biennially as of 1980–81. Each area is periodically reassessed in order to measure change in educational achievement. NAEP supplies the most complete and representative data available to measure what students in the United States know and can do.

NAEP has measured the reading achievement of 9-, 13-, and 17-year-old students five times: in the school years 1970–71, 1974–75, 1979–80, 1983–84, and lastly in 1985–86. (Data from the 1985–86 assessment have not yet been released.) In each assessment, NAEP has asked students to read prose passages or poems and answer questions about them. The passages are drawn from fiction and nonfiction.

Beginning with the 1983–84 assessment, the reading data were summarized using a single reading proficiency scale on which performance can be compared across age groups and other subgroups, whether tested at the same time or a number of years apart.

The reading proficiency levels reported here are:
Rudimentary (150)—The ability to carry out simple, discrete reading tasks, including selecting words, phrases, or sentences to describe a simple picture and interpreting simple written clues to identify a common object.

Basic (200)—The ability to understand specific or sequentially related information, including locating and identifying facts, combining ideas, and making inferences from simple informational paragraphs, stories, and news articles.

Intermediate (250)—The ability to search for specific information, interrelate ideas, and generalize from relatively lengthy passages dealing with literature, science, and social studies.

Adept (300)—The ability to find, understand, summarize, and explain relatively complicated information in literary and information passages, including material about topics studied at school and less familiar material.

Advanced (350)—The ability to synthesize and learn from specialized reading materials such as scientific materials, literary essays, historical documents, and materials similar to those found in professional and technical working environments.

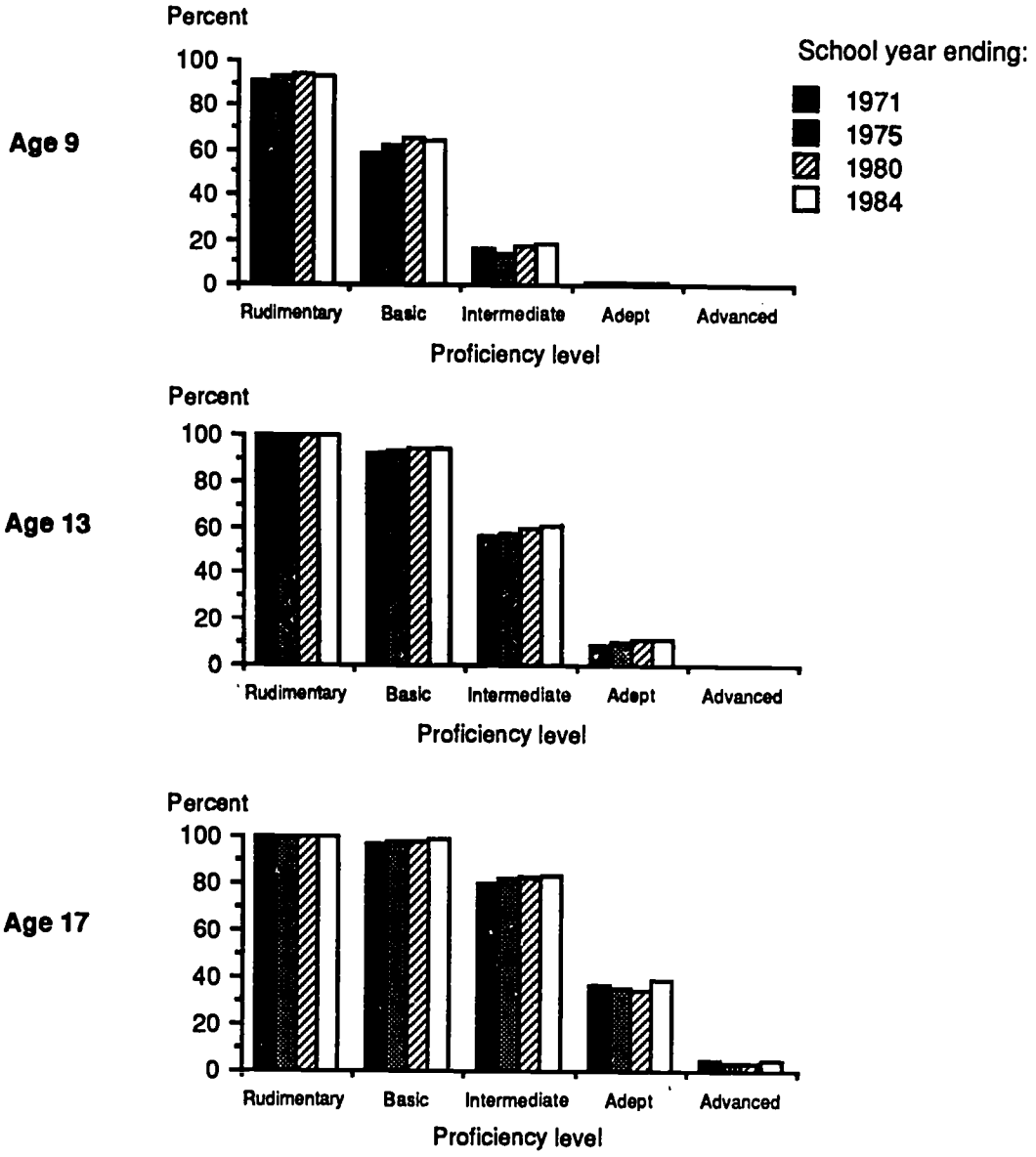
See table 1:1-1 for further details on reading performance by sex, race/ethnicity, region, parental education, type of community, reading material in the home, and television watched per day. An additional indicator (1:25) shows reading proficiency by the amount of reading materials in the home and by time spent viewing television.

Table 1:1
Percentage of 9-, 13-, and 17-year-old students at or above the five reading proficiency levels: 1971 to 1984

Reading level	Age	1971	1975	1980	1984
		Percent			
Rudimentary (150)	9	90.4	93.3	94.4	93.9
	13	99.7	99.6	99.8	99.8
	17	99.7	99.9	99.9	100.0
Basic (200)	9	58.3	61.7	65.1	64.2
	13	92.3	92.8	94.3	94.5
	17	96.6	97.5	97.9	98.6
Intermediate (250)	9	15.6	14.0	17.0	18.1
	13	57.0	57.5	59.3	60.3
	17	80.0	82.0	82.8	83.6
Adept (300)	9	1.1	0.7	0.8	1.0
	13	9.3	9.7	10.9	11.3
	17	37.2	36.1	34.8	39.2
Advanced (350)	9	0.0	0.0	0.0	0.0
	13	0.2	0.2	0.3	0.3
	17	4.9	3.5	3.1	4.9

SOURCE: National Assessment of Educational Progress. *The Reading Report Card, Progress Toward Excellence in Our Schools* (Report No. 15-R-01), 1985.

CHART 1:1 – Trends in reading proficiency level of 9-, 13-, and 17-year-old students



SOURCE: National Assessment of Educational Progress, 1985.

- Students at ages 9, 13, and 17 were reading better in 1984 than they were in 1971. Nine- and 13-year-olds improved through the 1970's and 17-year-olds improved between 1980 and 1984. The recent improvements by 17-year-olds may in part reflect earlier improvements at ages 9 and 13.
- Six percent of 9-year-olds in 1984 could not do rudimentary reading exercises and were in danger of future school failure. Forty percent of 13-year-old students and 16 percent of 17-year-old students had not acquired intermediate reading skills, and may have had difficulty reading the range of academic material they encountered in school.
- The majority (61 percent) of 17-year-old students are unable to perform at the adept level, and few (5 percent) have advanced reading skills.

Mathematics and science performance of 9-, 13-, and 17-year-old students

The National Assessment of Educational Progress (NAEP) measured the mathematics achievement of 9-, 13-, and 17-year-old students in the 1972–73, 1977–78, 1981–82, and 1985–86 school years. Data from the 1985–86 school year have not yet been released. The mathematics assessments were designed to measure students' attitudes toward mathematics and their abilities in various content areas such as numbers and numeration, variables and relationships, geometry, measurement, probability and statistics, graphs and tables, and technology (including the use of calculators and computers).

NAEP measured science achievement in 1969–70, 1972–73, 1976-77, and 1985–86. Data from the 1985–86 school year have not yet been released. The National Science Foundation sponsored an additional science assessment in 1981–82 using test items from the NAEP pool. In each science assessment, students were administered a variety of questions designed to assess achievement in biological, physical, and earth sciences. The outcome of these tests determined how well students met three broad objectives of science education: (1) to know the fundamental aspects of science; (2) to understand and apply these fundamental aspects of science in a wide range of problem situations; and (3) to appreciate the knowledge and processes of science, the consequences and limitations of science, and the personal and social relevance of science and technology.

Performance on the NAEP mathematics and science assessments is reported as the mean percentage of correct responses for each assessment. Since the test items in each assessment differ, the reported change in percentage of correct responses from one assessment to the next is based only on student responses to those items common to successive assessments. Both the number and content of those common items vary. Percentages correct based on different items are not directly comparable.

See table 1:2-1 for details on science performance by race and ethnicity, sex, region, and type of community.

Table 1:2

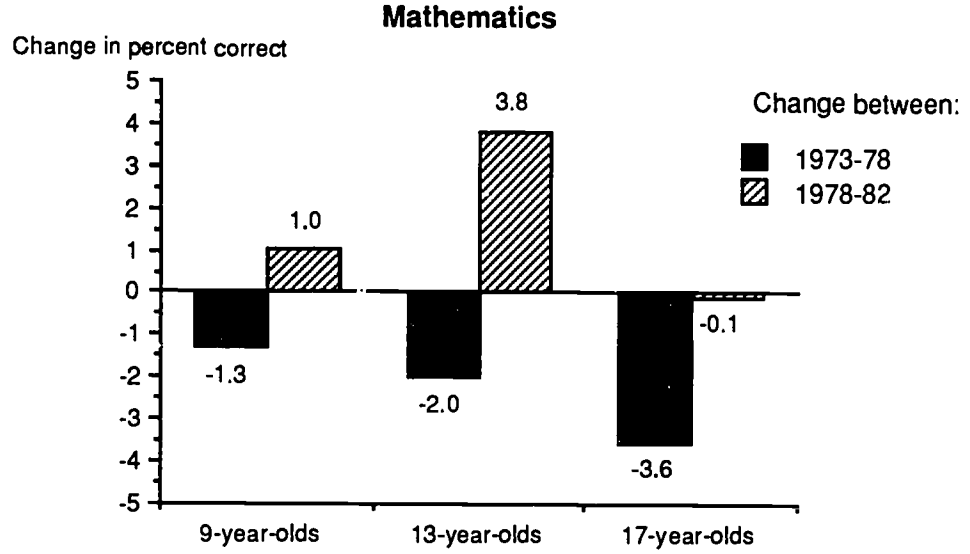
Average mathematics and science performance of 9-, 13-, and 17-year-old students: 1970 to 1982

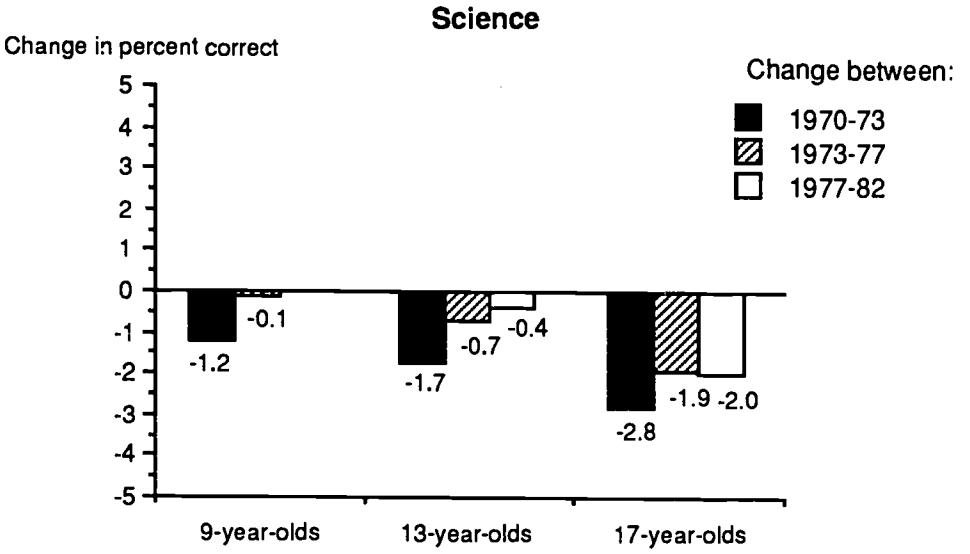
Subject and age group	Mean percent of correct responses*								
Mathematics	1973	1978	Change	1978	1982	Change			
9	38.1	36.8	−1.3	55.4	56.4	1.0			
13	52.6	50.6	−2.0	56.7	60.5	3.8			
17	51.7	48.1	−3.6	60.3	60.2	−0.1			
Science	1970	1973	Change	1973	1977	Change	1977	1982	Change
9	61.0	59.8	−1.2	52.3	52.2	−0.1	—	—	—
13	60.2	58.5	−1.7	54.5	53.8	−0.7	52.8	52.4	−0.4
17	45.2	42.5	−2.8	48.4	46.5	−1.9	61.7	59.7	−2.0

[1]Data from the 1982 Science Assessment and Research Project are not included for 9-year-olds because change for total content items was not reported.
*Many test questions differ from one test to the next. Therefore, the change in correct responses is based only on questions common to the two tests being compared. In addition, common questions might not be the same from one *pair* of tests to another. So a certain test might reflect two different response rates, depending upon which other test it is being compared with.

SOURCES: National Assessment of Educational Progress. *Mathematical Technical Report: Summary Volume*, 1980. National Assessment of Educational Progress, *The Third National Mathematics Assessment: Results, Trends and Issues* (Report No. 13-MA-01), 1983. National Assessment of Educational Progress, *Three National Assessments of Science: Changes in Achievement, 1969–77* (Report No. 08-S-00), 1978. For change data from 1977 to 1982: Science Assessment and Research Project, *Images of Science, A Summary of Results from the 1981–82 National Assessment in Science*, 1983.

CHART 1:2—Changes in mathematics and science performance of 9-, 13-, and 17-year-olds





SOURCES: National Assessment of Educational Progress and the Science Assessment and Research Project.

- From 1973 to 1982, mathematics performance was relatively stable for 9-year-olds, improved for 13-year-olds, and declined for 17-year-olds.
- Between 1970 and 1973, science performance showed overall declines for all three ages; science performance has continued to decline substantially for 17-year-olds since 1973.

International mathematics achievement of students in the 8th and 12th grades

The NAEP mathematics test series allows comparisons over time of the performance by American students in certain age groups. But data also are available that provide international comparisons. Because educational progress both depends on and contributes to the economic progress of the Nation, comparing U.S. scores with those of other countries is important.

In school year 1981-82, the Second International Mathematics Study was conducted under the auspices of the International Association for the Evaluation of Educational Achievement (IEA), an international network of leading educational research institutions. The tests were designed to determine the general course content of the mathematics curriculum in each country, how the math subjects were taught, and how well the students performed. Twenty-four developing and developed countries or provinces within those countries took part. The groups sampled were taken from (a) students enrolled in regular mathematics classes in the 8th grade or equivalent, and (b) students in advanced 12th grade classes, that is, those mathematics classes requiring as a prerequisite 2 years of algebra and 1 year of geometry.

The data below compare scores by subject for the United States, for participating developed countries combined, and for Japan, the highest scoring country. Without exception, the United States performance levels were below the international average and substantially below the performance levels of Japan.

NOTE: How achievement levels on these tests relate to students' opportunity to learn is addressed in "The Underachieving Curriculum." International Association for the Evaluation of Education Achievement (Champaign, IL: Stipes Publishing Co.), 1987.

Table 1:3A

Average percent correct on an international test of mathematics achievement for students in the 8th grade[1] or equivalent in participating developed countries: 1982

Country	Total	Arithmetic	Algebra	Geometry	Statistics	Measurement
	Average percent correct					
United States	46.0	51.4	42.1	37.8	57.7	40.8
International mean[2]	52.0	53.1	46.4	44.8	59.4	53.8
Japan	63.5	60.3	60.3	57.6	70.9	68.6

SOURCE: Livingstone, I.D. "Perceptions of the Intended and Implemented Mathematics Curriculum." A report of the Second International Mathematics Study prepared by the members of the International Association for the Evaluation of Educational Achievement for the U.S. Department of Education, Center for Statistics, June 1985.

Table 1:3B

Average achievement score on an international test in algebra and calculus taken by advanced mathematics students in the 12th grade or equivalent in participating developed countries: 1982

Country	Algebra	Calculus
	Average achievement score[3]	
United States	43.7	43.2
International mean[2]	49.0	48.6
Japan	57.1	57.6

[1]The grade for the analysis was defined as that grade in which a majority of students attained the age 13.00 to 13.11 by the middle of the school year. For Japan, the 7th grade was used because the Japanese considered the test more appropriate for that grade.
[2]See tables 1:3-1 and 1:3-2 for test data for each of the 14 developed countries and provinces included in the international mean shown here: Belgium (Flemish and French), Canada (British Columbia and Ontario), England and Wales (combined), Finland, Hungary, Japan, New Zealand, Scotland, Sweden, and the United States. France and the Netherlands are included for 8th grade only.
[3]The score is based on an international test of 63 items in algebra and calculus with the score standardized for the participating countries.

SOURCE: Miller, D. and Linn, R.L., "Cross National Achievement with Differential Retention Rates," unpublished contractor report to the Center for Statistics, April, 1986, special tabulations.

CHART 1:3A—Performance by 8th grade students on an international test in mathematics: 1982

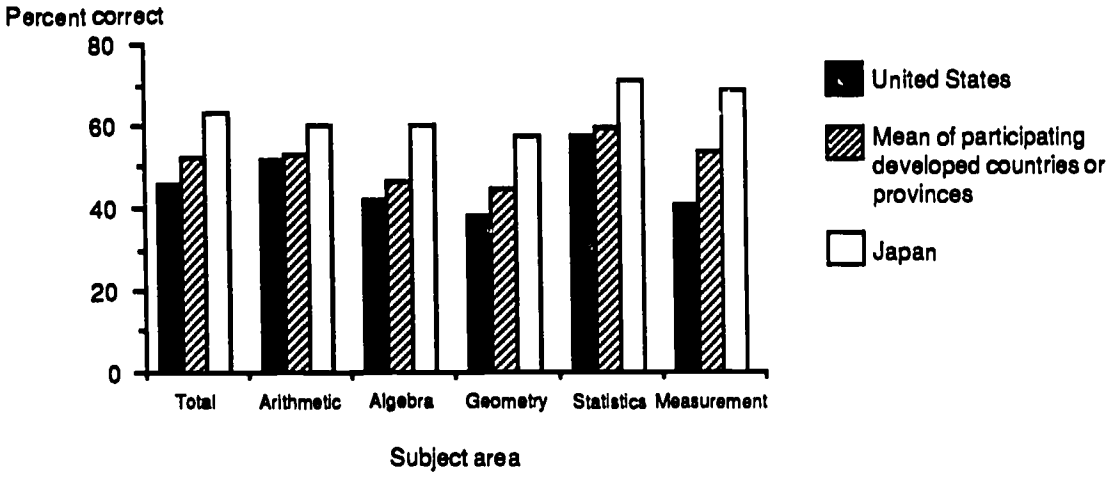
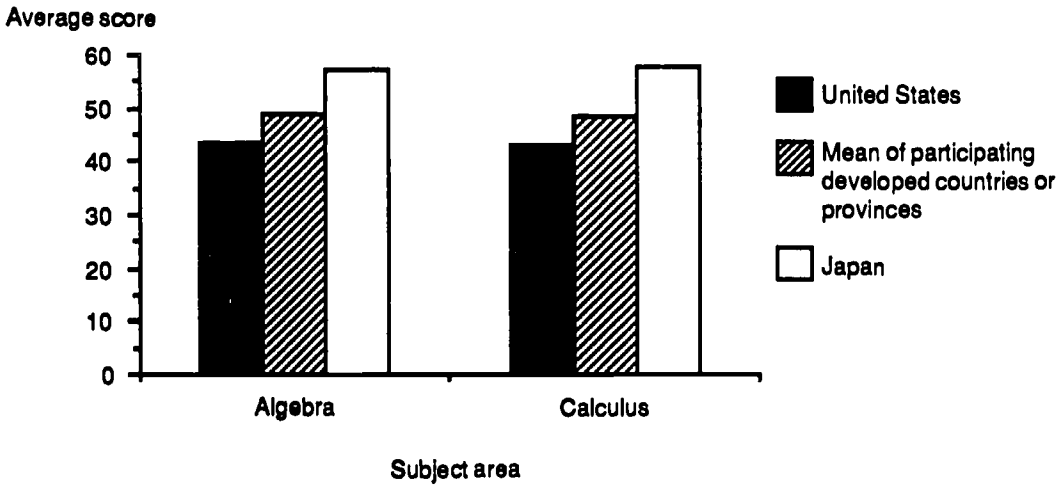


CHART 1:3B—Performance by advanced mathematics students in the 12th grade on international tests: 1982



SOURCE: International Association for the Evaluation of Educational Achievement, Second International Mathematics Study, 1986 reports.

(1) The grade for analysis was defined as all students in that grade in which a majority attained the age 13.00 to 13.11 by the middle of the school year. For Japan, the 7th grade was used because the Japanese considered the test more appropriate for that grade.

- On all tests, U.S. mathematics performance lagged behind not only high scoring Japan, but also the average of all participating developed countries.

Writing performance of 4th, 8th, and 11th grade students

The National Assessment of Educational Progress (NAEP) measured the writing achievement of American school children most recently in 1983–84. The assessment was administered to nationally representative samples of 4th, 8th, and 11th grade public and private school students.

Tasks in the 1983–84 assessment involved three types of writing:

Informative writing shares knowledge and conveys messages, instructions, and ideas. Tasks included preparing a note instructing a friend to care for a pet, describing a surrealistic painting, and comparing modern-day food with frontier food after reading a passage about frontier life.

Persuasive writing communicates specific points of view. Tasks included selecting a school rule and convincing the principal that it should be changed, and writing to apply for a summer job helping out at a swimming pool.

Imaginative writing includes literary and expressive compositions. Tasks were writing a story about adventures with a flashlight having special powers, and composing a scary ghost story.

Each writing task was scored in terms of the specific goal of that task. Papers were judged to be:

Unsatisfactory—Failed to reflect a basic understanding of the task (scale score=100);
Minimal—Recognized the elements needed to complete the task, but were not managed well enough to insure the intended purpose (200);
Adequate—Included features critical to accomplishing the purpose of the task and were likely to have the intended effect (300);
Elaborated—Beyond adequate, reflecting a higher level of coherence and elaboration (400);
Not rated—Illegible or otherwise unscorable (0).

Table 1:4

Average writing performance of 4th, 8th, and 11th grade students, by race/ethnicity: 1984

Race/ethnicity	Average writing scores* for grade: 4	8	11
Total	158	205	219
Black	138	186	200
Hispanic	146	188	200
Asian	163	211	219
White	163	211	224

*Average Response Method.

SOURCE: National Assessment of Educational Progress, *The Writing Report Card, Writing Achievement in American Schools, 1984* (Report 15-W-02), 1986.

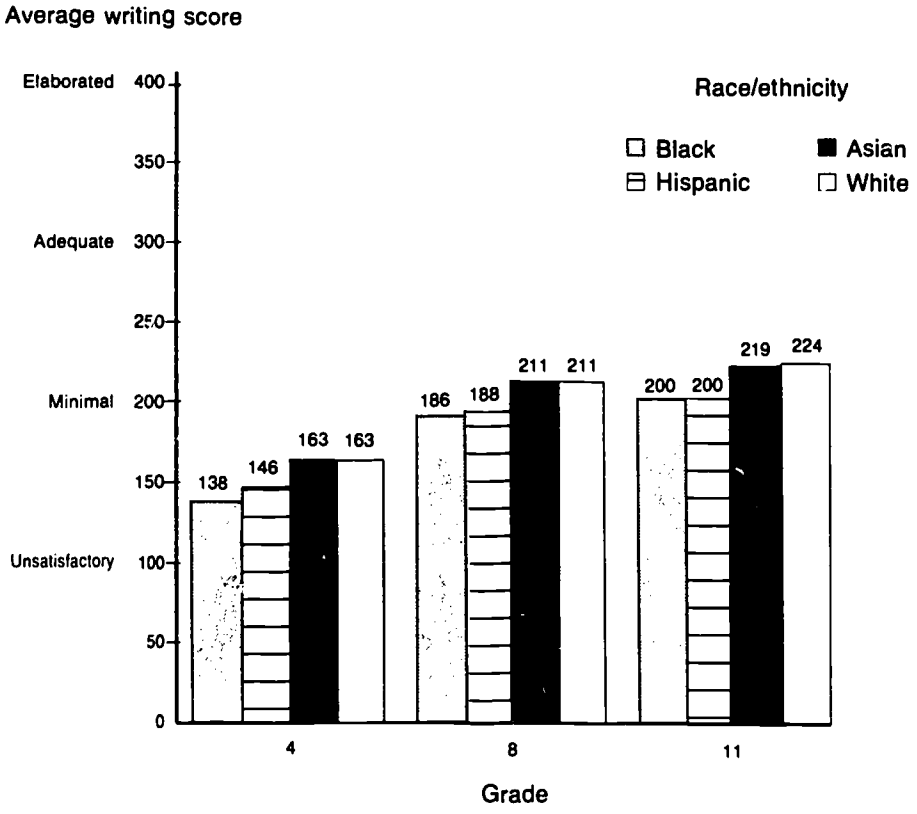
The Average Response Method (ARM) measures of writing achievement presented in table 1:4 are the averages of respondents' scores on 10 tasks involving different types of writing. (Separate scores were not derived for Informative, Persuasive and Imaginative areas.) See technical note 1:4 in appendix A for further information on scale construction.

*The Writing Report Card** concluded that most students, of all racial/ethnic backgrounds, are unable to write well except in response to the simplest of tasks. While writing performance was better at the higher grades, even in the 11th grade fewer than one-fourth of the students performed *adequately*. In general, American students can write at some *minimal* level, but cannot express themselves sufficiently well to ensure that their writing will accomplish the intended purpose.

See appendix table 1:4-1 for further details on writing performance by sex, region, parental education, size/type of community, amount of reading material in the home, and television watched per day.

*National Assessment of Educational Progress, *The Writing Report Card, Writing Achievement in American Schools, 1984* (Report 15-W-02), 1986.

CHART 1:4—Writing performance, by race/ethnicity: 1984



SOURCE: National Assessment of Educational Progress, *The Writing Report Card*, 1986.

- On average, students at all grade levels were unable to express themselves well enough to ensure that their writing will accomplish its intended purpose. Even in the 11th grade, average writing performance was only slightly above the *minimal* level.

- While the writing performance of 8th graders was considerably better than that of 4th graders, the writing performance of 11th graders was only slightly better than that of 8th graders.

- The writing performance of Asian and white students was higher than that of black and Hispanic students.

A. Outcomes: Student Performance

College entrance examination scores

Performance on college entrance tests is frequently used as a measure of our schools' effectiveness. The tests taken most frequently by college-bound students in the United States are the Scholastic Aptitude Test (SAT) and the American College Testing Program Assessment (ACT). These tests are designed to predict how well students might perform in college and are not intended as measures of the outcomes of elementary and secondary schooling. The SAT, for instance, is described as a test of "developed abilities" which is not linked to any specific high school curriculum. Care must be taken not to interpret performance on these tests as overall measures of what is learned in schools. College entrance examination scores by State are given in appendix table 1:5-1.

College entrance examination tests are typically taken by juniors and seniors in high school who plan to apply for college admission. Students taking college entrance tests do not represent all high school students; the scores reported here do not reflect the performance of the many high school students who are not planning to go to college.

Scores on the SAT and ACT are reported separately for public and private high school students. Students attending private high schools generally score higher on the ACT and verbal SAT tests than public school students. However, scores on the SAT mathematics test are similar for both public and private high school students. Appendix table 1:5-2 shows SAT and ACT scores by control of the high school.

Trends in scores on the Preliminary Scholastic Aptitude Test (PSAT), taken by sophomores and juniors in preparation for the SAT, provide an interesting contrast to trends in scores on the SAT. Scores on the PSAT remained stable through the 1960's, but during the 1970's dropped parallel to the decline in scores on the SAT. Appendix table 1:5-3 shows PSAT scores by year.

Table 1:5A

Scholastic Aptitude Test scores: School year ending 1963 to 1986

Year*	Verbal	Mathematics	Total	Year	Verbal	Mathematics	Total
	Average test scores				Average test scores		
1963	478	502	980	1978	429	468	897
1964	475	498	973	1979	427	467	894
1965	473	496	969	1980	424	466	890
1966	471	496	967	1981	424	466	890
1967	466	492	958	1982	426	467	893
1968	466	492	958	1983	425	468	893
1969	463	493	956	1984	426	471	897
1970	460	488	948	1985	431	475	906
1971	455	488	943	1986	431	475	906
1972	453	484	937				
1973	445	481	926				
1974	444	480	924				
1975	434	472	906				
1976	431	472	903				
1977	429	470	899				

*Averages for 1972 through 1986 are based on college-bound seniors. Averages for 1963 through 1971 are estimates provided by the College Entrance Examination Board; background information needed for specific identification of college-bound seniors was not collected before 1972.

Table 1:5B

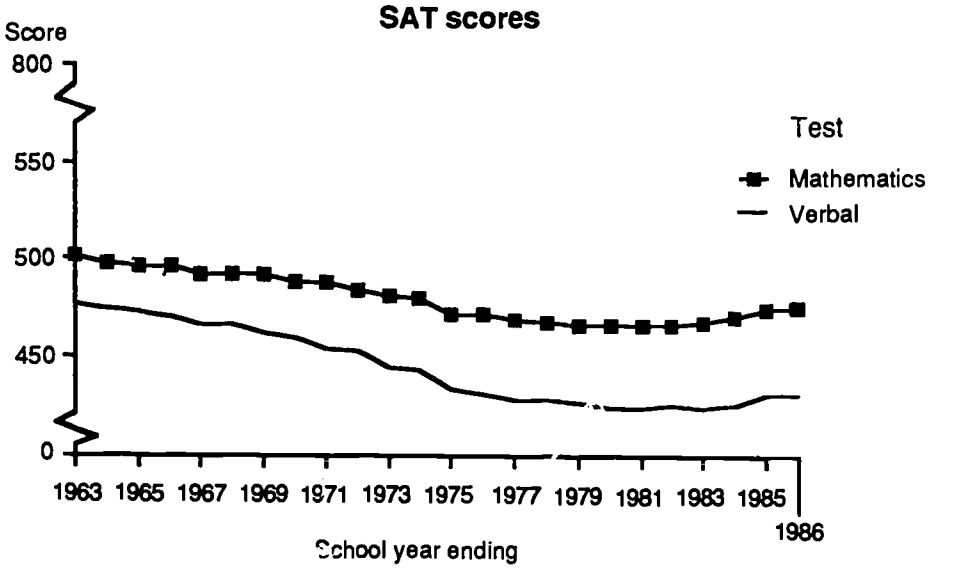
American College Testing scores: School year ending 1970 to 1986

Year*	English	Mathematics	Social studies	Natural sciences	Composite
	Average test scores				
1970	18.5	20.0	19.7	20.8	19.9
1971	18.0	19.1	18.7	20.5	19.2
1972	17.9	18.8	18.6	20.6	19.1
1973	18.1	19.1	18.3	20.8	19.2
1974	17.9	18.3	18.1	20.8	18.9
1975	17.7	17.6	17.4	21.1	18.6
1976	17.5	17.5	17.0	20.8	18.3
1977	17.7	17.4	17.3	20.9	18.4
1978	17.9	17.5	17.1	20.9	18.5
1979	17.9	17.5	17.2	21.1	18.6
1980	17.9	17.4	17.2	21.1	18.5
1981	17.8	17.3	17.2	21.0	18.5
1982	17.9	17.2	17.3	20.8	18.4
1983	17.8	16.9	17.1	20.9	18.3
1984	18.1	17.3	17.3	21.0	18.5
1985	18.1	17.2	17.4	21.2	18.6
1986	18.5	17.3	17.6	21.4	18.8

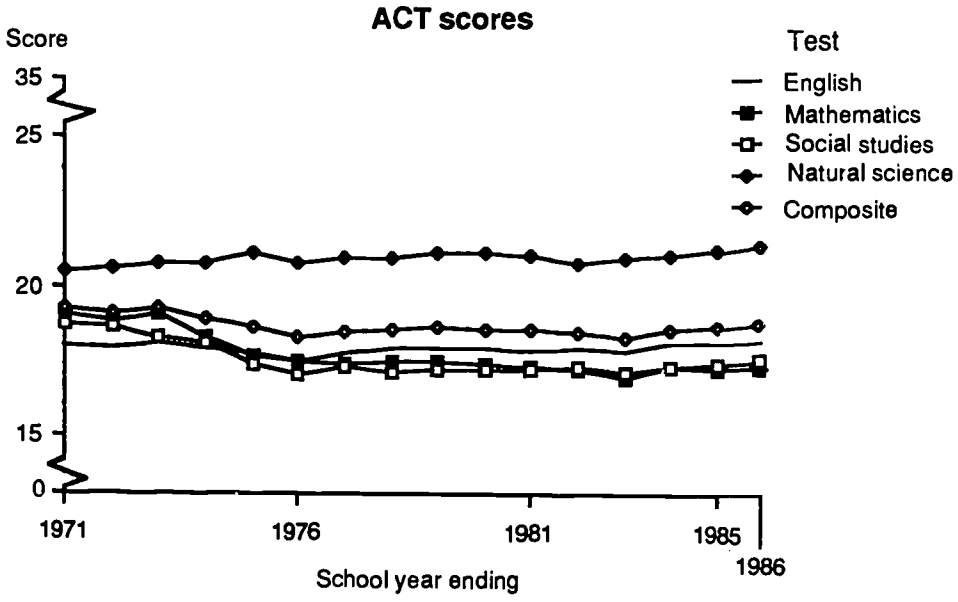
*Averages for 1970 through 1984 are based on all high school students tested. For 1985 and 1986, averages are based on college-bound seniors only.

SOURCES: College Entrance Examination Board, *National Report: College-Bound Seniors*, various years. The American College Testing Program, *The High School Profile Report, Normative Data*, various years.

CHART 1:5 – Trends in college entrance examination scores



SOURCE: The College Board



SOURCE: The American College Testing Program.

- Total SAT scores declined steadily from 1963 to 1980, for an overall decline of 90 points, but have increased by 16 points since 1980. The increase from 1984 to 1985 of 9 points was the largest annual increase in recent years and represented a recovery to 1975 levels. There was no further increase in 1986, however.
- The composite ACT score declined somewhat from the early 1970's to the mid-1970's. The composite score of 18.8 in 1986 was the highest since 1974.

High school graduates scoring over 600 on the Scholastic Aptitude Test

The decline in Scholastic Aptitude Test (SAT) scores from the early 1960's through the 1970's is well known. Many explanations have been offered for this disturbing trend. The College Board's Advisory Panel on the Scholastic Aptitude Test Score Decline attributed part of the decline in the 1960's to changes in the population of test-takers.[1]

Test score trends may be examined in a variety of ways. One common way is to plot the average performance on a test over time, to see how the typical test-taker in 1982, for instance, scored relative to the typical test-taker in 1969.

Another way to study trends is to examine the proportion of high-scoring students in the population. This figure may be less susceptible to fluctuations due to a changing pool of test-takers. One might assume that the college chances of highly able students have not changed appreciably in recent years, and that most academically talented high school students take the SAT (in those areas where it is the prevalent college entrance exam). If these assumptions are true, then changes in the proportion of high-scoring students ought not be attributed to a changing pool of SAT examinees; explanations for the trends must lie elsewhere. Yet trends in the proportion of high school graduates scoring over 600 on the verbal and mathematics subtests are very similar to the overall trends in average performance on the SAT for the same period. The proportion of high scorers declined fairly steadily during the 1970's, but has increased during the 1980's.

The Advisory Panel concluded that declines in performance among high scorers represent the effects of pervasive influences that affected the scores of all types of SAT takers. These include shifts in high school curricula and standards away from academic rigor, the declining role of the family in education and possibly the effects of increased television watching. The recent upswing in scores may reflect a shift in some of these forces.

The percentage of high school graduates scoring 26 or above in the American College Testing Program is given in appendix table 1:6-1.

*Advisory Panel on the Scholastic Aptitude Test Score Decline. *On Further Examination.* New York: College Entrance Examination Board, 1977. See also Eckland, B.K. "College Examination Trends," in Austin, G.R. and Garber, H., (eds.), *The Rise and Fall of National Test Scores.* New York: Academic Press, 1982.

Table 1:6

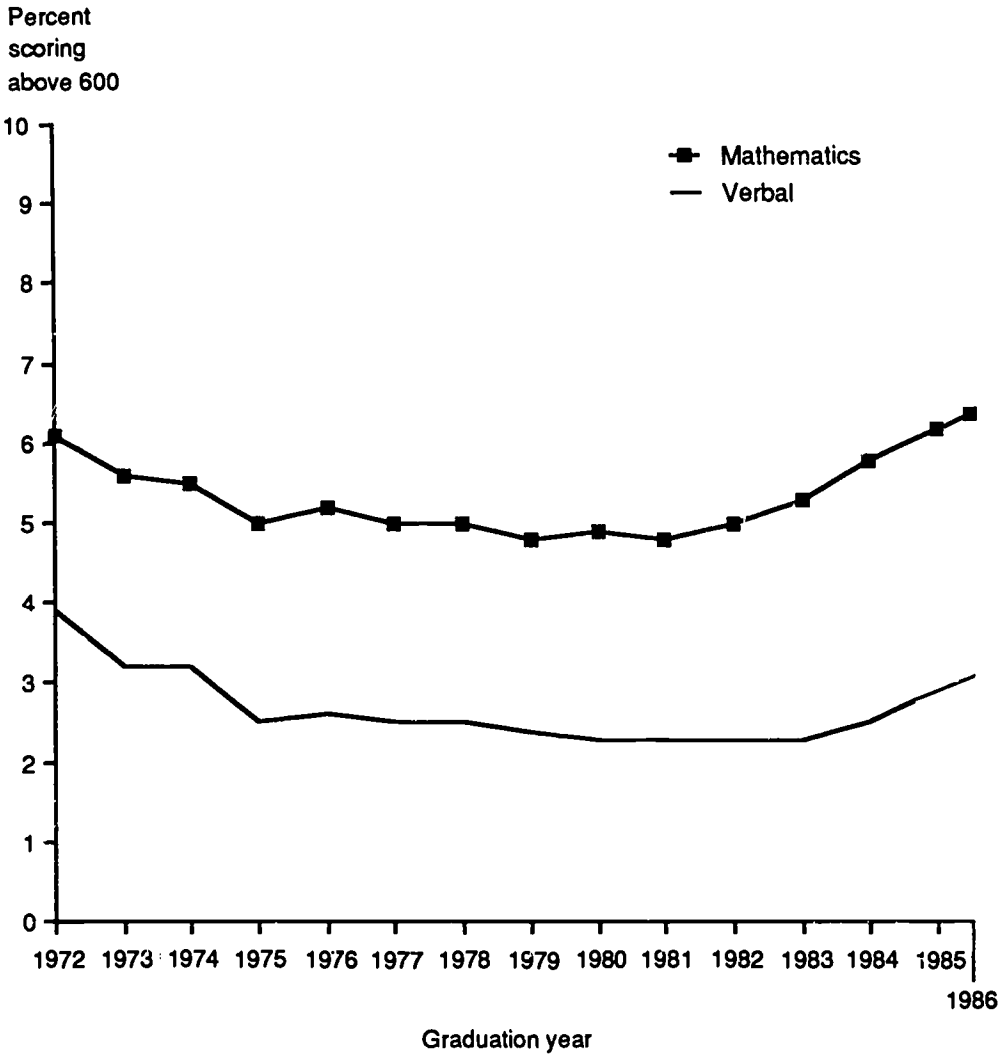
Percentage of high school graduates scoring above 600 on the SAT verbal and mathematics tests: 1972 to 1986

Graduation year	Number of graduates (in thousands)	Verbal[1]		Mathematics[1]	
		Number	Percent	Number	Percent
1972	3,001	116,620	3.9	182,602	6.1
1973	3,036	98,256	3.2	169,029	5.6
1974	3,073	98,766	3.2	169,844	5.5
1975	3,133	79,133	2.5	155,516	5.0
1976	3,148	81,964	2.6	163,398	5.2
1977	3,155	78,342	2.5	157,466	5.0
1978	3,127	77,732	2.5	155,846	5.0
1979	3,117	76,261	2.4	149,021	4.8
1980	3,043	71,363	2.3	149,615	4.9
1981	3,020	69,612	2.3	143,566	4.8
1982	3,001	70,448	2.3	150,822	5.0
1983	2,888	66,292	2.3	153,344	5.3
1984	2,773	70,479	2.5	160,634	5.8
1985	[2]2,683	76,977	2.9	166,932	6.2
1986	[3]2,641	78,742	3.0	179,586	6.8

[1]Based on college-bound seniors only.
[2]Preliminary; revised from previously published figure.
[3]Estimated.

SOURCES: College Entrance Examination Board, *National Report, College-Bound Seniors*, various years. U.S. Department of Education, Center for Education Statistics, *Digest of Education Statistics, 1987* (based on Nonpublic Elementary and Secondary Schools surveys, Common Core of Data surveys, and unpublished tabulations); "Targeted Forecast: Public High School Graduates," *Statistical Highlights*, 1987.

CHART 1:6—Percentage of high school graduates scoring above 600 on the SAT verbal and mathematics tests



SOURCE: College Entrance Examination Board, *National Report: College-Bound Seniors*, various years, and *Digest of Education Statistics, 1987.*

- The proportion of high school graduates with high SAT scores declined during the 1970's and has risen in the 1980's.
- The trends for the proportion of high SAT scorers generally paralleled the trends in average SAT performance for the same period.

A. Outcomes: Student Performance

Academic coursework and achievement

The 1980's have been a period of renewed concern about the adequacy of high school students' academic preparation for postsecondary education and employment. Following publication of *A Nation at Risk*, a number of States passed legislation increasing high school graduation and college entrance requirements.[1] A number of studies have shown that course-taking affects achievement.[2] Such achievement might be reflected in higher standardized test scores, more effective performance in advanced courses in the area, or improved job performance. Such factors as the ability levels of individual students and the quality (as distinct from the quantity) of the courses taken also have an effect on subsequent academic performance.

In the fall of 1985, the American College Testing (ACT) Program expanded the collection of information on high school courses taken by students completing the ACT Assessment. Students were asked to indicate which of 30 secondary-level courses they had taken or planned to take before graduating from high school. The particular courses listed included those that customarily form the basis of a college preparatory (academic or "core") high school curriculum and are frequently required or recommended for admission to postsecondary institutions. These 30 courses were selected to give a relatively complete picture of a student's basic academic preparation. See technical note 1:7 in appendix A for a complete listing of the courses included.

With the collection of this expanded course information, it became possible to examine the ACT scores of students with differing preparation in the four subject areas represented in the ACT tests—English, mathematics, natural science, and social science. It was expected that students who took more courses in an area would score higher on the corresponding test.

On average, high school seniors who had taken more coursework did score higher on the corresponding test. This study examined the effects of taking more coursework for students at different levels of academic ability, defined as rank in class. Students who ranked higher tended to take more coursework, but within class rank quartiles, students with more coursework scored higher on the ACT subtests. This relationship was most apparent in the areas of mathematics and natural sciences. While there are no data on the quality of individual courses taken, the quantity of courses is related to the group average scores of students, and the completion of one more course in a content area is associated with an increase in the average subtest score. In sum, one tends to know more about those subjects one has studied more.[3]

Table 1:7

American College Testing (ACT) Assessment average scores, by content area and number of courses taken in relevant content area: 1985

Content area	Total	Number of courses taken in content area*						
		1	2	3	4	5	6	7
		Average scores						
English	18.6	15.2	16.7	17.3	18.7	19.0	—	—
Mathematics	17.5	9.3	11.3	15.1	18.7	22.0	24.3	26.5
Social studies	17.8	15.2	17.0	17.9	18.2	18.5	18.4	18.3
Natural science	21.5	17.4	19.3	22.6	25.4	—	—	—

—Insufficient number of students.

*Course may have been taken for one term or full year.

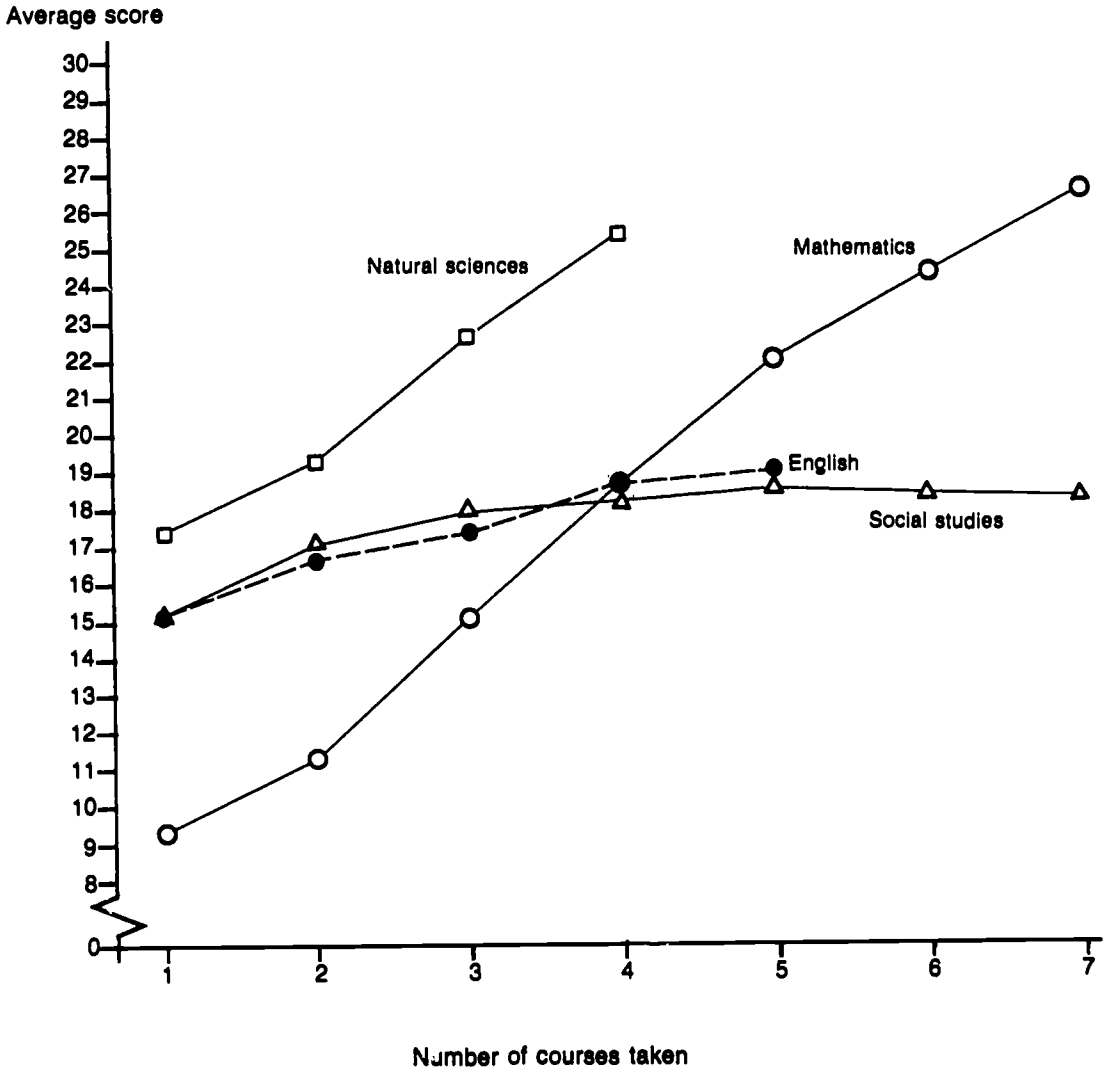
SOURCE: Laing, J., Engen, H., and Maxey, J. "The Relationship of High School Coursework to the Corresponding ACT Assessment Scores," *ACT Research Report 87-3*, 1987.

[1]The National Commission on Excellence in Education. *A Nation at Risk: The Imperative for Educational Reform*. Washington, D.C.: U.S. Government Printing Office, 1983.

[2]Alexander, K.L. and Pallas, A.M. "Curriculum Reform and School Performance: An Evaluation of the 'New Basics'." *American Journal of Education, Vol. 92, pp.* 391–420, 1984. Jones, L.V. "White-Black Achievement Differences." *American Psychologist, Vol. 39, pp.* 1207–1213, 1984. Schmidt, W.H. "High School Course-taking: Its Relationship to Achievement." *Journal of Curriculum Studies, Vol. 15, pp.* 311–332, 1983. U.S. Department of Education. *The Condition of Education, 1982 Edition*, 196–197. Washington, D.C.: U.S. Government Printing Office, 1982.

[3]Laing, J., Engen, H., and Maxey, J. "The Relationship of High School Coursework to the Corresponding ACT Assessment Scores," *ACT Research Report 87-3*, 1987.

CHART 1:7—Average ACT subject area scores, by number of courses taken in relevant subject area: 1985



SOURCE: Laing, Enger, and Maxey, ACT Research Report 87-3, 1987.

- Taking an additional course in a subject area was associated with a higher average score on the ACT test in the same area, with the exception of a sixth or seventh course in social studies.
- Increases in the average test scores with each additional course taken were much larger for mathematics and natural sciences than for English and social studies.

High school completion, by race and ethnicity

One important measure of this Nation's success in educating its youth is the proportion of its students who complete secondary school. Those who drop out may not obtain sufficient knowledge and skills to function productively in our society.

The public generally expects an 18- or 19-year-old to have a high school diploma or its equivalent. And, indeed, most do. However, many students take longer to complete their high school education. For example, the percentage of 20- to 24-year-olds who have completed their secondary school education is about 10 percentage points greater than for 18- to 19-year-olds. In the 1980's, for the population 25-34, the completion rate is even higher (see appendix table 1:8-1).

These data were computed from tabulations from the Bureau of the Census Current Population Surveys. They were collected from household interviews and include information on individuals who completed 12 or more years of schooling or who obtained an alternative credential such as a General Educational Development (GED) certificate.

Table 1:8

High school completion by race and Hispanic origin, persons ages 18 to 19 and 20 to 24: 1974 to 1985

Year	Age: 18 to 19				Age: 20 to 24			
	Total	White	Black	Hispanic[1]	Total	White	Black	Hispanic[1]
	Percentage of age group				Percentage of age group			
1974	73.4	76.2	55.8	48.9	83.9	85.6	72.5	59.0
1975	73.7	77.0	52.8	50.0	83.9	85.9	70.5	61.3
1976	73.1	75.4	58.2	50.9	83.7	85.4	71.9	58.0
1977	72.9	75.7	54.9	50.7	83.7	85.1	73.4	56.6
1978	73.5	76.3	54.9	48.9	83.7	85.2	73.5	58.7
1979	72.8	75.3	56.4	53.7	83.2	84.9	71.8	55.8
1980	73.7	76.1	59.3	46.1	83.8	85.1	74.3	57.1
1981	72.5	74.8	59.6	47.2	83.7	85.0	75.7	59.3
1982	72.0	74.5	58.2	51.7	84.1	85.4	76.2	60.2
1983	72.7	75.6	59.1	50.3	83.3	84.6	75.8	56.6
1984	73.3	75.5	63.0	58.3	84.6	85.7	79.3	60.7
1985	74.6	76.7	62.8	49.8	85.3	86.0	80.8	67.4

[1]Most of the year-to-year differences in completion rates for Hispanics are not statistically significant due to the small size of the Hispanic sample. Hispanics may be of any race.

NOTE: Separate analyses were not done for Asians because they are not identifiable from the October Current Population Survey data tapes.

SOURCES: U.S. Department of Commerce, Bureau of the Census, Current Population Reports, Population Characteristics, Series P-20. *School Enrollment—Social and Economic Characteristics of Students: October* (various years); Current Population Surveys (unpublished tabulations).

CHART 1:8A—High school completion rates, by race and Hispanic origin, persons aged 18-19

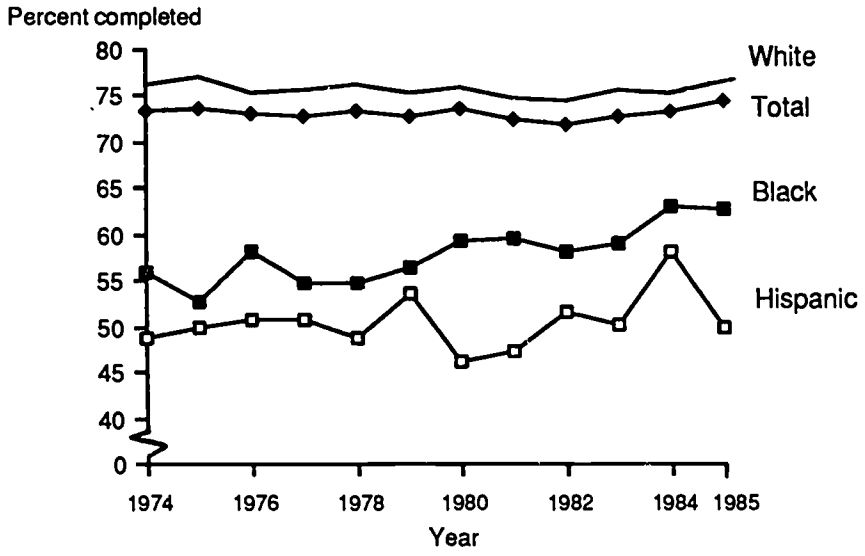
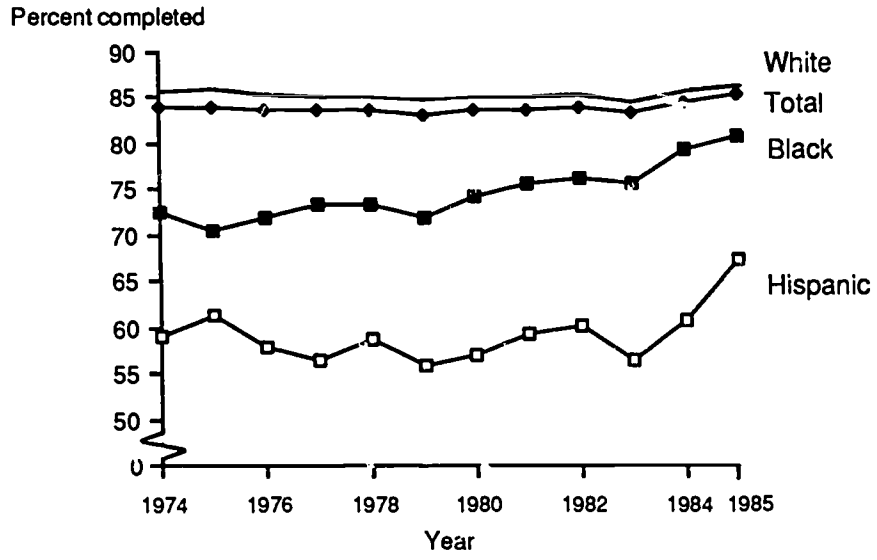


CHART 1:8B—High school completion rates, by race and Hispanic origin, persons aged 20-24



SOURCE: Bureau of the Census, Current Population Reports, Series P-20.

- Nationally, slightly less than three-quarters of all 18- and 19-year-olds have completed high school.
- The proportion of 20- to 24-year-olds who have completed high school has held steady at about 84 percent since 1974.
- The high school completion rate among black youth, for both 18- to 19- and 20- to 24-year-olds, was higher in 1985 than in 1975. The rates for both black and Hispanic youth still lag far behind those of whites.

High school dropouts who later complete their education

The extent to which students drop out of high school is seen by many as an important indicator of the Nation's overall education performance. Dropping out is associated with a wide variety of costs, both to the individual and society. An individual's failure to complete high school may result in limited occupational and economic opportunities.[1] The costs to society may entail increased expenditures for government assistance to individuals and families, higher rates of crime, and maintenance of costly programs for the purpose of public employment and training.[2]

The High School and Beyond study provides information about the educational attainment of the 1980 sophomore class. About one in six students from that class dropped out of high school[3] before their expected graduation in 1982. Dropout rates for blacks and Hispanics were higher than those for whites, with almost one in five blacks and one in four Hispanics dropping out before graduation. Males generally dropped out at higher rates than females, and the difference was greater for blacks than for whites or Hispanics. One in four black males dropped out before their graduation, while only about one in six black females dropped out.

While these dropout rates appear to be alarmingly high, many students who drop out of high school subsequently return to complete their education, either by earning a regular diploma or an equivalency certificate. More than one in three dropouts from the 1980 sophomore class returned and graduated within 2 years of expected graduation. Ultimately, almost 90 percent of the class of 1982 completed their high school education by 1984. However, just as blacks and Hispanics were more likely to drop out than were whites, they were also less likely to return and complete their education once they had dropped out.[4] Only 30 percent of Hispanic dropouts and 33 percent of black dropouts completed school within 2 years of their scheduled graduation, as compared to 41 percent of white dropouts.

Table 1:9

High school dropouts and completers, sophomore class of 1980, by sex and race/ethnicity

Race/ethnicity	Total	Male	Female
	Percent who dropped out		
Total	16.4	18.2	14.6
White	13.7	14.9	12.6
Black	21.6	26.6	17.3
Hispanic	27.1	28.2	25.8
	Percent of dropouts who completed by fall 1984		
Total	38.1	39.7	36.0
White	41.4	41.5	41.2
Black	33.1	38.2	26.1
Hispanic	30.3	34.1	25.7
	Percent of all students who completed by fall 1984		
Total	89.8	89.0	90.7
White	91.9	91.3	92.6
Black	85.5	83.6	87.2
Hispanic	81.1	81.4	80.8

SOURCE: U.S. Department of Education, Center for Education Statistics, High School and Beyond study, 1980 sophomore class second follow-up data file, special tabulations, 1987.

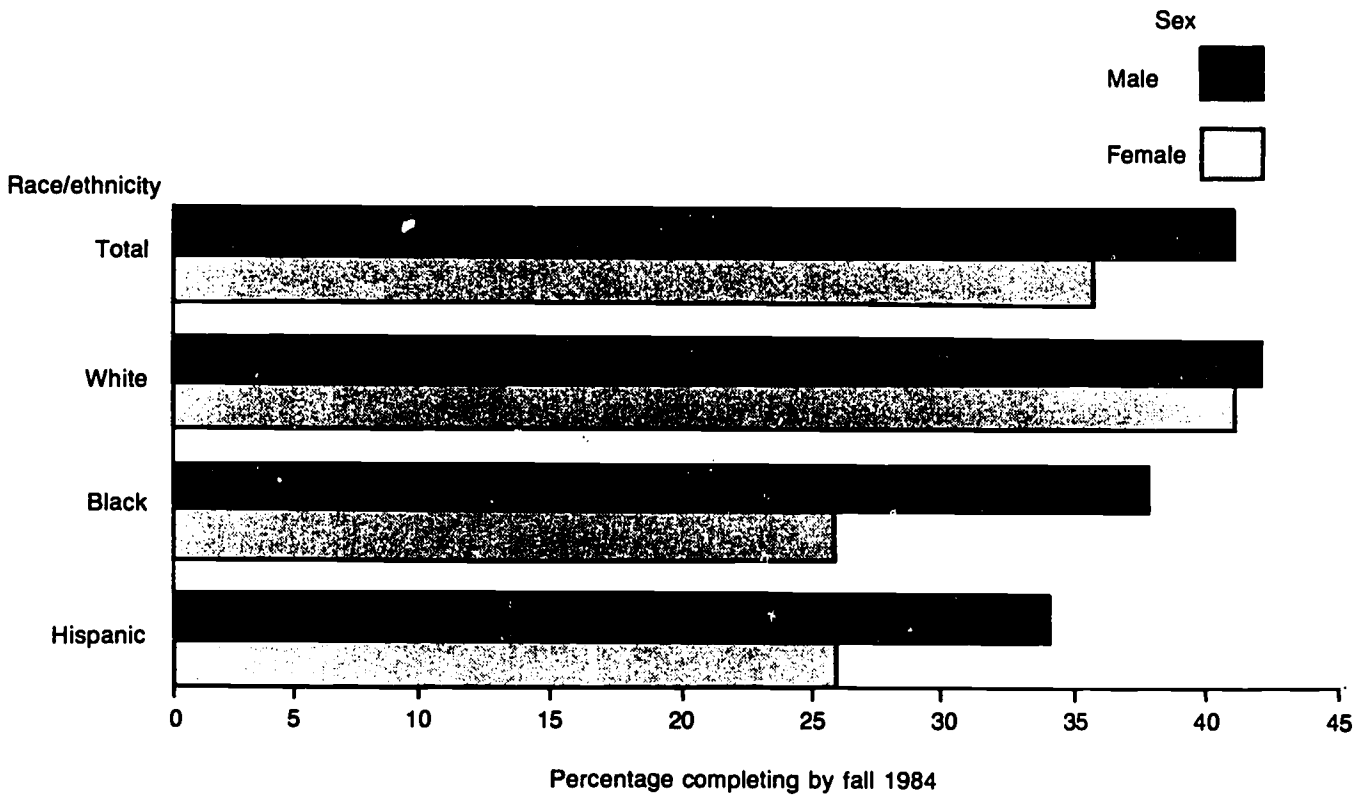
[1]Rumberger, R.W. (1983). "Dropping Out of High School: The Influence of Race, Sex, and Family Background." *American Educational Research Journal.* Vol. 20. pp. 199-220.

[2]Ehrlich, I. (1975). "On the Relationship Between Education and Crime." In Juster, F.T. (ed.). *Education, Income and Motor Skills.* pp. 195-201.

[3]The dropout rate reported here is different from the completion rate based on the Current Population Survey reported in Indicator 1:8. For a full discussion of the differences between these statistics, see Pallas, A. (1987). *School Dropouts in the United States.* In Stern, J., & Williams, M.F. (eds.). *The Condition of Education, 1986 Edition.* Also for a definition of high school dropouts used in this indicator, see the glossary.

[4]However, black males and females differed significantly in th[illegible] which they returned to school. While black males tended to drop out [illegible] rates than black females, black males tended to return at higher rates

CHART 1:9—Percentage of dropouts from the class of 1982 who completed high school by fall 1984



SOURCE: Center for Education Statistics, High School and Beyond study, 1987.

- While about 16 percent of the high school sophomore class of 1980 dropped out of school before scheduled graduation, nearly 40 percent of the dropouts returned by 1984 to complete their high school education.
- White students, while less likely to drop out than black or Hispanic students, were more likely to return and complete high school once they did drop out. Males, while more likely to drop out than females, were also more likely to return and complete high school.

Literacy skills of young adults

The National Assessment of Educational Progress (NAEP) recently completed an assessment of the literacy skills of young adults aged 21 to 25. Rather than a single measure or specific point on a scale that separates the "literate" from the "illiterate," the NAEP approach provides an understanding of the various types and levels of literacy skills that allow an individual successfully to use a broad range of materials for different purposes. The definition of literacy used was: *Using printed and written information to function in society, to achieve one's goals, and to develop one's knowledge and potential.*

The literacy skills of young adults were characterized on three scales representing distinct aspects of literacy:

Prose comprehension—knowledge and skills needed to understand and use information from texts such as poems, editorials, and news stories;

Document literacy—knowledge and skills needed to locate and use information in nontextual materials, including tables, forms, maps and bus schedules;

Quantitative literacy—knowledge and skills needed to apply arithmetic operations in combination with printed materials, as in balancing a checkbook or completing an order form.

In addition, multiple-choice exercises similar in content to traditional tests of reading achievement were administered to the young adults in order to link their performance to that of students in the NAEP reading assessment. The scales, ranging from 0 to 500, are further described in technical note 1:10 in appendix A.

This survey demonstrates that there is a serious literacy problem, but it is *not* one of illiteracy for the overwhelming majority of young adults. Most can perform easy tasks, such as writing a simple description of the job they would like, matching money-saving coupons to a short shopping list, or totaling entries on a bank deposit slip. However, only a small percentage do well on more complex and challenging tasks. (These might include deriving the main argument from a newspaper editorial, using a bus schedule to select the appropriate bus for given departures and arrivals, or determining the 10 percent tip on a restaurant bill.) A study based on the Young Adult Literacy data warns that schools, families, businesses, and others must work together to avoid a future of widening social divisions and diminished productivity that will result if current literacy levels are not improved.* See table 1:10-1 for literacy scale scores by selected demographic characteristics.

*Venezky, R.L., Kaestle, C.F., and Sum, A.M. *The Subtle Danger, Reflections on the Literacy Abilities of America's Young Adults.* Center for the Assessment of Educational Progress, Educational Testing Service (Report No. 16-CAEP-01), January 1987.

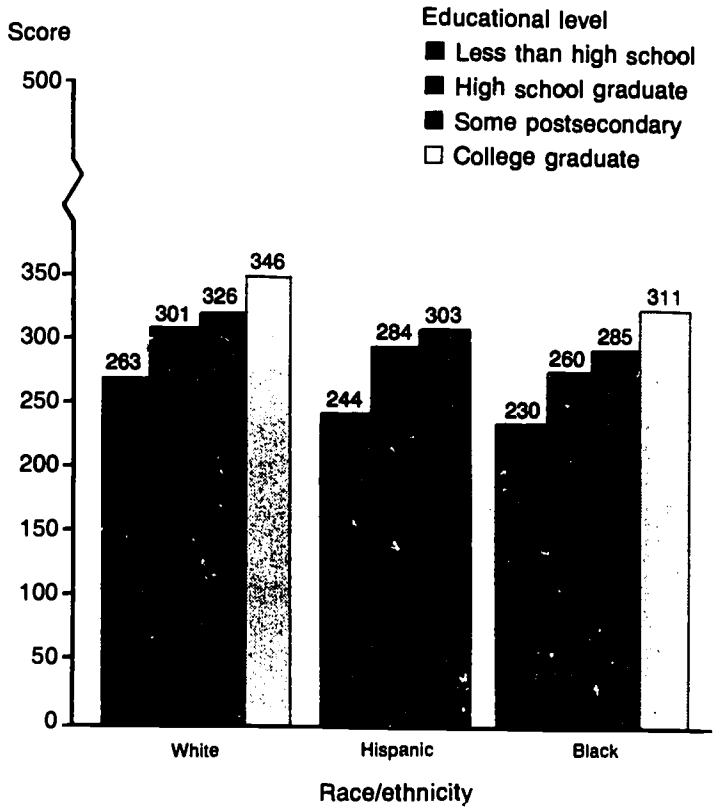
Table 1:10

Average scale scores of young adults aged 21 to 25 on the NAEP reading scale, prose, document, and quantitative scales, by race/ethnicity and educational attainment: 1985

Race/ethnicity and scale	Total	Educational attainment				
		Less than high school	High school equivalency certificate	High school graduate	Some postsecondary	College degree
		Average scale scores*				
Total						
NAEP reading	305.0	253.6	283.9	292.8	319.9	343.2
Prose	305.0	253.4	287.3	291.9	319.3	344.6
Document	305.0	246.5	280.8	292.5	320.8	348.1
Quantitative	305.0	253.3	275.3	291.5	320.4	344.8
White						
NAEP reading	313.8	262.8	291.3	300.5	326.0	345.9
Prose	314.4	265.9	296.4	300.6	326.0	346.7
Document	315.7	259.5	287.0	301.8	328.2	351.6
Quantitative	314.6	265.7	282.4	300.2	326.8	348.6
Black						
NAEP reading	263.3	230.1	—	259.5	284.9	310.7
Prose	258.3	223.7	—	253.0	281.0	307.3
Document	255.7	215.7	—	251.8	279.8	302.4
Quantitative	259.1	223.2	—	256.3	282.8	302.9
Hispanic						
NAEP reading	286.6	243.5	—	284.3	302.8	—
Prose	285.5	234.5	—	285.8	299.1	—
Document	278.7	226.6	—	277.4	297.1	—
Quantitative	280.3	235.5	—	275.7	303.1	—

—Insufficient number of cases.
*Based on those who took the assessment or simulation tasks (98 percent of the sample).
SOURCE: National Assessment of Educational Progress, Young Adult Literacy, 1985 (special tabulations, 1987).

CHART 1:10—NAEP reading proficiency scale scores of young adults aged 21 to 25, by race/ethnicity and educational level: 1985



SOURCE: National Assessment of Educational Progress, Young Adult Literacy, 1985.

- Black young adults, on average, perform significantly below white young adults on the NAEP reading scale. These differences appear at each level of educational attainment. Hispanic young adults, generally, perform midway between their black and white peers.
- Performance on the NAEP reading scale rises markedly with each additional level of education.

Participation of high school graduates in postsecondary education

College attendance has grown considerably in the past 35 years. Since 1950, enrollment has increased more than 300 percent, while the number of institutions has increased almost 80 percent. During the fall after high school graduation, 51 percent of the 1980 high school graduates had enrolled in some form of postsecondary education. By February 1984, that rate had climbed to almost 66 percent. Students who graduated from a private high school were more likely to attend some form of postsecondary education than public high school graduates.

Table 1:11

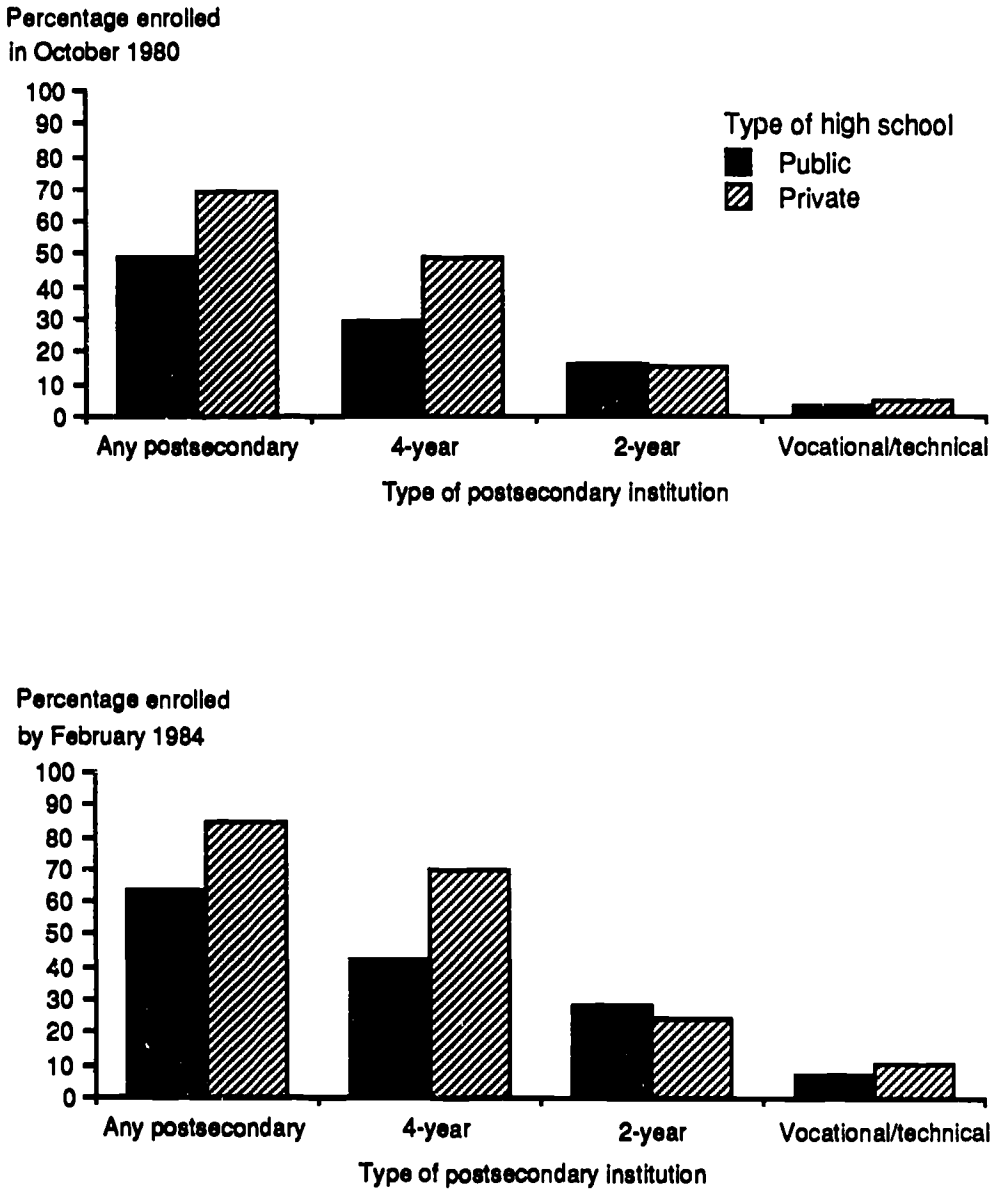
Postsecondary enrollment rates for 1980 high school graduates, by control of high school and type of institution

Type of institution	High school graduates		
	All graduates	Public school	Private school
	Percent enrolled in October 1980		
Total	50.6	48.5	68.9
4-year	30.9	28.9	48.9
2-year	16.0	16.1	15.1
Vocational/technical	3.6	3.5	4.9
	Percent enrolled by February 1984		
Ever attended*	65.8	63.7	84.4
4-year	45.2	42.4	69.6
2-year	27.9	28.3	24.4
Vocational/technical	7.6	7.4	10.2

* Represents the percentage of 1980 graduates who had enrolled in any type of postsecondary institution by February 1984. Since some students attended more than one type of institution during the period, e.g., initially enrolling in a 2-year institution and then transferring to a 4-year school, the sum of the subgroups is greater than the proportion "ever" attending.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School and Beyond, 1985, unpublished tabulations.

CHART 1:11—Postsecondary enrollment rates for 1980 high school graduates



SOURCE: Center for Education Statistics, High School and Beyond.

- While approximately half of high school graduates begin postsecondary studies immediately after high school, an additional 15 percent enroll in postsecondary education during the 3½ years following high school.
- Graduates of private high schools are more likely to begin postsecondary education immediately after high school, and are more likely to enroll in postsecondary education in the 3½ years following high school, than graduates of public high schools.
- Graduates of private high schools are much more likely to enroll in a 4-year college than graduates of public high schools.

Expenditures per pupil in public schools

Resources going to schools can be measured one resource at a time (e.g., teacher/pupil ratio) or several resources together (e.g., expenditures per pupil). Policymakers are interested in both types of measures. In particular, they are interested in how these measures behave both over time and between jurisdictions.

This indicator focuses on the second measure, expenditures per pupil, and examines it over time. Expenditures per pupil are presented in current as well as constant dollars, adjusted for inflation. The Consumer Price Index was used to make the inflation adjustment. Both total expenditures per pupil and current expenditures per pupil are shown. Current expenditures include expenditures for operating local public schools, including such items as salaries, fixed charges, student transportation, books and materials, and energy costs, but excluding long-term expenses of capital outlay and interest on school debt. Total expenditures include these long-term expenses plus all current expenditures.

For several reasons, this commonly reported measure should be used with care. First, the data for this indicator are based on State reports of expenditures and counts of pupils. The States do not measure these terms in exactly the same way, and some have changed their definitions over time. Second, a more appropriate adjustment of current to constant expenditures would be based on changes in the prices of goods and services purchased by public schools rather than consumers, but no generally accepted education expenditure index of this type exists. Finally, the indicator provides no information about individual school district expenditures, the quality or type of resources purchased, and their impact on the learning process.

Table 1:12

Total and current expenditures per pupil in average daily attendance in public elementary and secondary schools: Selected years, 1949–50 to 1985–86

	Current dollars		Constant 1985–86 dollars[1]	
School year	Total expenditures[2] per pupil	Current expenditures[3] per pupil	Total expenditures[2] per pupil	Current expenditures[3] per pupil
1949–50	259	209	1,190	960
1951–52	313	244	1,295	1,010
1953–54	351	265	1,420	1,072
1955–56	388	294	1,571	1,190
1957–58	449	341	1,709	1,298
1959–60	472	375	1,748	1,389
1961–62	530	419	1,918	1,516
1963–64	559	460	1,971	1,622
1965–66	654	537	2,229	1,830
1967–68	786	658	2,514	2,105
1969–70	955	816	2,751	2,351
1971–72	1,128	990	2,983	2,618
1973–74	1,364	1,207	3,182	2,816
1975–76	1,697	1,504	3,329	2,950
1976–77	1,816	1,638	3,367	3,037
1977–78	2,002	1,823	3,478	3,167
1978–79	2,210	2,021	3,510	3,210
1979–80	2,491	2,272	3,492	3,185
1980–81	[4]2,762	2,487	[4]3,470	3,125
1981–82	[4]2,997	2,726	[4]3,465	3,152
1982–83	[4]3,230	2,955	[4]3,580	3,276
1983–84	[4]3,500	3,173	[4]3,742	3,392
1984–85	[4]3,740	3,449	[4]3,849	3,549
1985–86	[4]4,051	3,705	[4]4,051	3,705

[1]Based on the Consumer Price Index, prepared by the Bureau of Labor Statistics, U.S. Department of Labor. Data were adjusted from a calendar-year basis to a school-year basis.

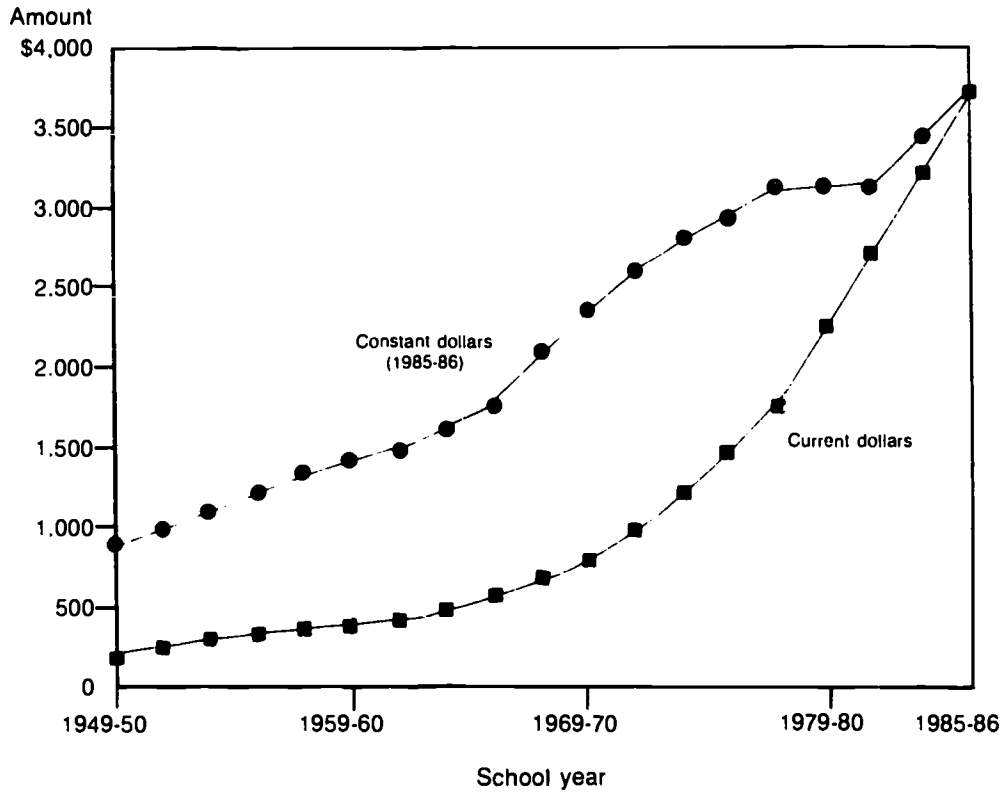
[2]Total expenditures include all current expenditures, capital outlay and interest on school debt.

[3]Current expenditures include expenditures for operating local public schools, excluding capital outlay and interest on debt.

[4]Estimated.

SOURCE: U.S. Department of Education, Center for Education Statistics, *Statistics of State School Systems*, various years; *Revenues and Expenditures for Public Elementary and Secondary Education*, various years; Center for Education Statistics, "Common Core of Data" survey, various years, and unpublished data.

CHART 1:12–Trends in current expenditures per pupil



SOURCE: Center for Education Statistics, *Statistics of State School Systems, Revenues and Expenditures for Public Elementary and Secondary Education*, "Common Core of Data" survey, and unpublished tabulations.

- Between the 1949-50 and 1985-86 school years, current expenditures per pupil in constant dollars more than tripled, from $960 to $3,705 per pupil.
- Between 1977-78 and 1981-82, current expenditures per pupil in constant dollars remained relatively unchanged, but then began rising steadily.

Public school revenues

Public schools obtain revenues from three sources: local, State, and Federal governments. The share that each contributes is determined by many factors, including the jurisdiction's perception of its role in supporting public education (which to some extent is constitutionally prescribed); the extent to which it taxes itself; the size of its property, sales, and/or income tax base; and the competing demands on its tax revenues. Historically, local governments have been limited to property taxes as a basis for raising funds. In recent years they have experienced difficulty in using this source for additional funds (e.g., Proposition 13 in California). State governments have historically used the sales tax as a revenue-raising vehicle. More recently they have turned to income taxes as an additional source.

The data indicate that the revenue shares of two of the three jurisdictions have changed considerably over the last 60 years. Most noticeable is the decline in the local government's share to approximately one-half its 1919-20 level with the concommitant three-fold increase in the State government share. Finally, while the Federal government's share has been small, it grew steadily between 1919-20 and 1979-80 when it peaked at nearly 10 percent. It is now less than 7 percent.

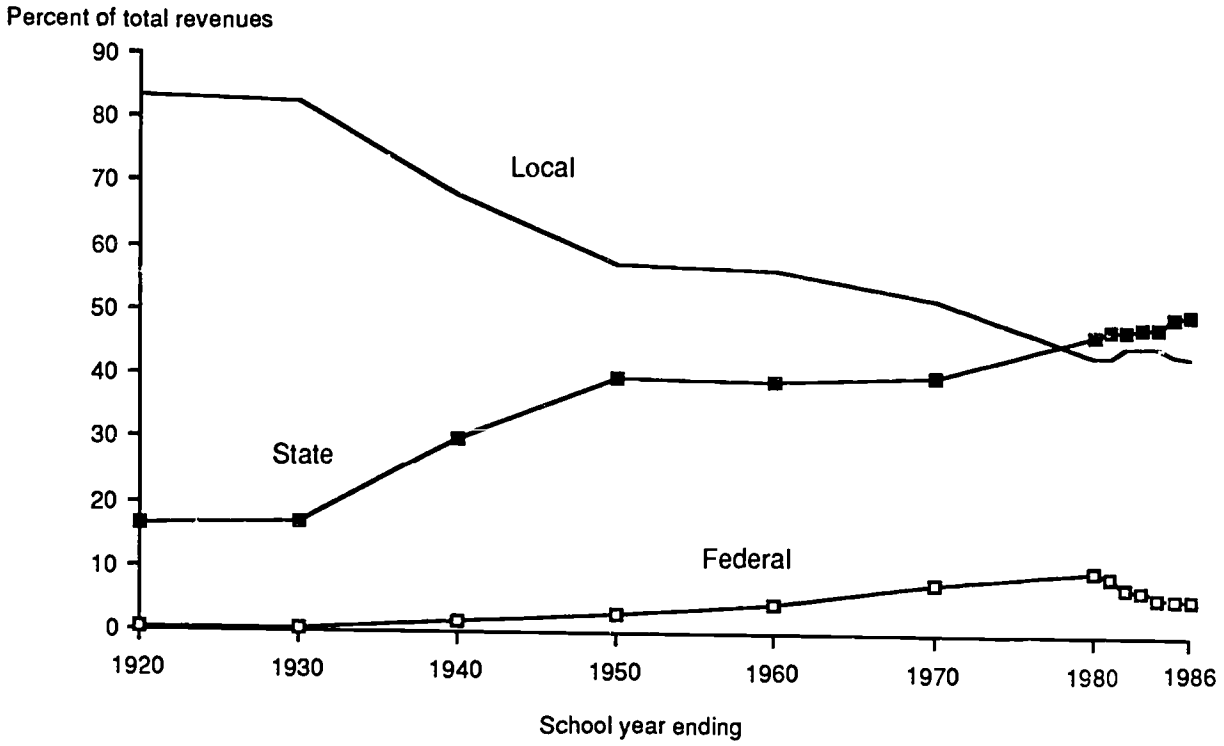
Table 1:13

Sources of public elementary and secondary school revenues: 1920 through 1986

School year	Total revenues[1] (in thousands)	Sources		
		Local[2]	State	Federal
1919–20	$970,121	83.2	16.5	0.3
1929–30	2,088,557	82.7	16.9	0.4
1939–40	2,260,527	68.0	30.3	1.8
1949–50	5,437,044	57.3	39.8	2.9
1959–60	14,748,618	56.5	39.1	4.4
1969–70	40,266,923	52.1	39.9	8.0
1979–80	96,881,165	43.4	46.8	9.8
1980–81	105,949,087	43.4	47.4	9.2
1981–82	110,191,257	45.0	47.6	7.4
1982–83[3]	117,497,502	45.0	47.9	7.1
1983–84[3]	126,055,419	45.4	47.8	6.8
1984–85[3,4]	137,350,722	44.7	48.8	6.5
1985–86[5]	149,687,997	43.5	50.1	6.4

[1]In current dollars.
[2]Includes intermediate sources (see the glossary for the definition).
[3]Revised from previously published figures.
[4]Data for local and State revenues are preliminary.
[5]Estimated by the National Education Association.
NOTE: Data beginning in 1959–60 include Alaska and Hawaii.
SOURCES: U.S. Department of Education, Center for Education Statistics, *Digest of Education Statistics, 1987*, (based on Common Core of Data surveys, various years). National Education Association, *Estimates of School Statistics: 1985–86*, April 1986, copyrighted.

CHART 1:13—National trends in revenue sources for public elementary and secondary education



SOURCE: Center for Education Statistics, *Digest of Education Statistics, 1987*; and National Education Association, *Estimates of School Statistics 1985-86*, copyrighted.

- Total revenues for elementary and secondary education have increased over 100-fold since the 1919-20 school year.
- State and local governments have been the primary source of revenues for public elementary and secondary education, while the Federal share has remained relatively small.
- In 1979 an historic shift occurred when the States' share of revenues rose above the locals' share for the first time.
- Between the 1919-20 and 1985-86 school years, local governments' share of total revenues fell from 83.2 percent to 43.5 percent, a decline of nearly 40 percentage points.
- State governments' share of revenues has made up for most of the decline in local governments' share. State governments' share increased 3-fold between the 1919-20 and 1985-86 school years.

National index of public school revenues in relation to population

Determining the level of revenues available to public schools requires that a number of factors be taken into account: (a) the number of pupils enrolled in public schools, (b) public education revenues, (c) total personal income, and (d) the total population.

The national index presented in table 1:14 is designed to show the relationship between per pupil public school revenues and per capita personal income, i.e., the funds available on average for each student relative to the average income per person in the population. This relationship can be expressed in either of two formulas:*

$$\frac{\frac{\text{public education revenues}}{\text{total personal income}}}{\frac{\text{public school pupils}}{\text{total population}}} \times 1{,}000$$

or

$$\frac{\text{per pupil education revenues}}{\text{per capita personal income}} \times 1{,}000$$

Since the index is based on four separate variables, changes over time in the overall index can be due to circumstances affecting any of the four factors. For example, the index rose between 1929–30 and 1939–40 because (1) there was a small decrease in enrollments, (2) total revenues increased, and (3) per capita income fell. The index was higher in 1959–60 than it had been in 1949–50 for a different reason—because per pupil revenues increased proportionally more during the decade than did per capita income.

State finance indices are found in appendix table 1:14-1. Great care should be taken in interpreting differences among the States, since each index is the result of the interplay of the four factors affecting the formula. For example, a State that devoted 4 percent of its total personal income to education and had 10 percent of its population in public schools would have an index of 400 using the same formula above. Another State that also devoted 4 percent of its total personal income to education, but enrolled 25 percent of its population in public schools would have an index of only 160. Thus, a State with a larger proportion of its population enrolled in public schools must raise more revenues for education to achieve the same index score as a similar State with a smaller proportion of its citizens in public schools.

*These formulas do not include private school enrollments or revenues, nor do they take into account other types of support of the public schools such as volunteer work by parents.

Table 1:14

National index of public school revenues in relation to personal income: 1930 through 1986

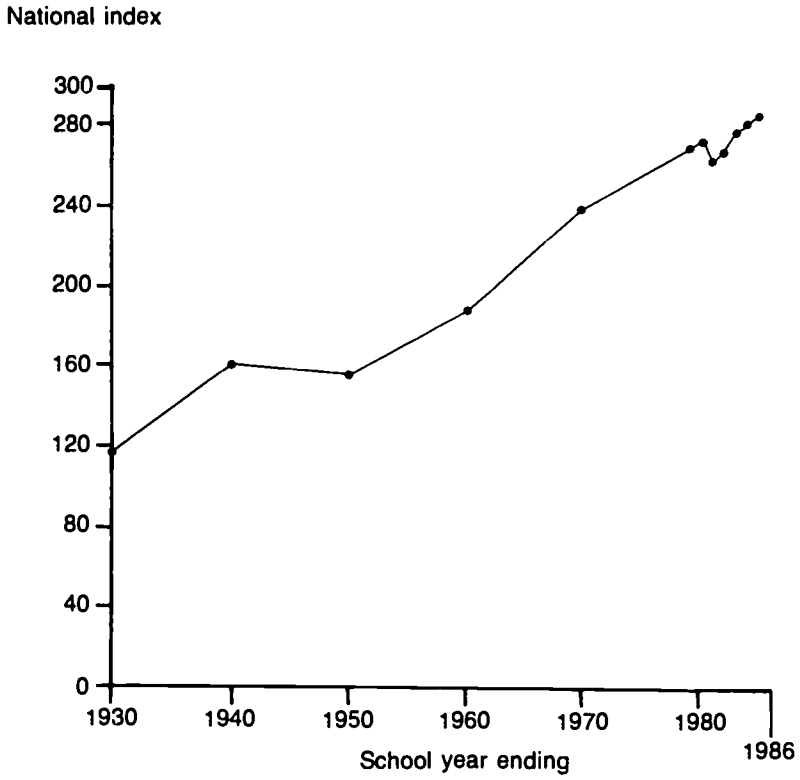
Fall of the school year	National index	Total education revenues (Current dollars, in thousands)	Public elementary and secondary enrollment (In thousands)	Per pupil education revenues (Current dollars)	Per capita personal income (Current dollars)
1929–30	116.70	$2,088,557	25,678	$81.34	$697
1939–40	161.01	2,260,527	25,434	88.88	552
1949–50	157.13	5,437,044	25,111	216.52	1,378
1959–60	189.19	14,746,618	36,087	408.64	2,160
1969–70	237.66	40,266,923	45,619	882.68	3,714
1979–80	268.91	96,881,165	41,645	2,326.36	8,651
1980–81	272.27	105,949,087	40,987	2,584.94	9,494
1981–82	260.62	110,191,257	40,099	2,747.98	10,544
1982–83[1]	265.98	117,497,502	39,652	2,955.86	11,113
1983–84[1]	274.23	126,055,419	39,352	3,203.28	11,681
1984–85[1]	273.69	[2]137,350,722	39,293	3,495.55	12,772
1985–86[1]	281.64	[3]149,687,997	[3]39,513	3,788.32	13,451

[1]Revised from previously published figures.
[2]Preliminary.
[3]Estimated by the National Education Association.

NOTE: Data beginning in 1959–60 include Alaska and Hawaii. Revenues are all education revenues from local, State, and Federal sources for public elementary and secondary education for the relevant school year. Pupils are the number of public school pupils in average daily attendance during the school year. Per capita income is total personal income for the year divided by the population. While education revenues are generated from taxes paid by individuals and corporations out of current income, the income measure only includes personal income. Corporate income is not included. However, many analysts believe that taxes ultimately will be paid out of personal income because business taxes are passed on to the consumer.

SOURCES: U.S. Department of Education, Center for Education Statistics, unpublished data and *Digest of Education Statistics, 1987* (based on Common Core of Data Surveys, various years). National Education Association, *Estimates of School Statistics, 1985–86*, 1986, copyrighted. U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*.

CHART 1:14—National index of public school finance in relation to population



SOURCE: Center for Education Statistics, *The Condition of Education, 1986 Edition.*

- The national index has more than doubled since 1930.
- The national index grew steadily, except for the World War II period, for the 50 years between 1930 and 1980.
- Since the 1980-81 school year the national index has been somewhat unstable, first falling and then rising.

B. Resources: Material Resources

Library media centers

Over the past three decades, library media centers,[1] their staff, and the services they offer have become an increasingly important part of public school education.[2] The percentage of public schools with these centers grew from 50 percent in 1958 to 93 percent in 1985. The vast majority of this growth occurred at the elementary school level, where they increased from about one-third to over 9 out of 10 of the schools. (Throughout the period, nearly all secondary schools had library media centers.)

Several factors contributed to this increase. One was some States' adoption of legislation requiring centers in public schools. Another was the closing or consolidation of very small schools that were less likely to have centers.

Accompanying the increase in library media centers was an increase in the proportion of students with access to school library materials. The percent of public school students in schools with library media centers rose from 68 percent to 98 percent between 1958 and 1985.

Since 1974, average constant dollar total expenditures (excluding salaries and wages) per public school center have declined. Also, the allocation of these expenditures has shifted from collection to equipment. Expenditures per school on the collection of books, magazines and media were lower in 1985 than in 1974 in both absolute and relative terms, whereas those for equipment, particularly microcomputers, were higher.

The percent of private schools with library media centers was lower in 1985 than in 1979,[3,4] but the percent of private school students in schools with centers was about the same. In 1985, 75 percent of the schools had centers and 88 percent of the students were in schools with centers. The average private school library had less than one FTE staff member per school. As with public schools, average constant dollar expenditures were lower in 1985 than in the late 1970's. In addition, expenditures shifted from collection to equipment over the period.

[1]See glossary for the definition of a library media center.

[2]U.S. Department of Education, Center for Education Statistics, *Statistics of Public and Private School Library Media Centers, 1985–86 (with historical comparisons from 1958–1985)*, April 1987. This report has results of national surveys of centers in elementary and secondary public and private schools in 1985. It also presents historical data, where possible, obtained from periodic surveys of public school centers dating from 1958 and private school centers dating from 1979. All data discussed in here have been taken from this report.

[3]Data about library media centers in private elementary and secondary schools are only available for 1979 and 1985. See footnote 2, table 1:15.

[4]The decline may have been, at least in part, an artifact of sampling differences between the 1979 and 1985 surveys. See footnote 2, table 1:15.

Table 1:15— School library media centers, by selected characteristics

Characteristic	Public school centers[1]					Private school centers[2]	
	1958	1962	1974	1978	1985	1979	1985
Percent of schools with centers	50	59	85	85	93	83	75
Percent of pupils in schools with centers	68	74	—	93	98	86	88
Total center staff, full-time-equivalent (FTE)	—	—	101,466	84,000	96,324	—	—
Average FTE staff per school[3]	—	—	1.36	1.19	1.31	—	.87
Expenditures, other than salaries and wages, for centers (1985 dollars)[3,4,5]							
Average per school, total	—	—	$10,603	$8,967	$7,577	$4,713	$4,042
Collection	—	—	7,667	6,384	4,743	3,694	2,761
Equipment	—	—	1,934	1,620	2,124	726	970
Average per pupil, total	—	—	—	$15.65	$14.20	$15.61	$14.87
Collection	—	—	—	11.14	8.89	12.26	10.15
Equipment	—	—	—	2.83	3.98	2.41	3.57

—Not available.

[1]The 1978 survey contained some technical/vocational centers and other special schools, while the other surveys covered only regular public schools. The 1958 and 1962 surveys excluded schools in districts with fewer than 150 pupils. Part of the change in the percent of schools having libraries may be attributable to these definitional differences.

[2]The private school surveys included special education, vocational and technical, and alternative schools in addition to regular elementary and secondary schools. The 1985 survey contained proportionately more small and more special purpose schools than the 1979 survey. The proportionately larger number of small and special schools in the 1985 survey may account for the drop in the percent of private schools with library media centers between 1979 and 1985.

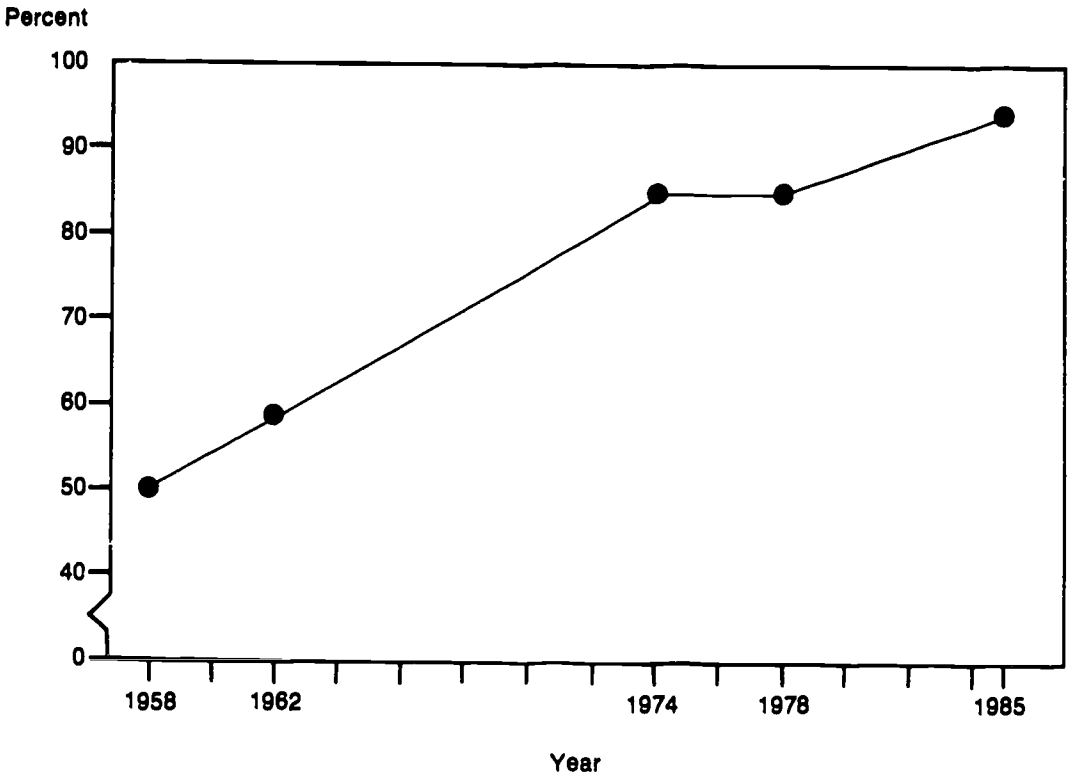
[3]Data are for schools with library media centers only.

[4]Dollars were adjusted based on the Consumer Price Index.

[5]Includes collection expenditures (for books, periodicals, microforms, computer software, audiovisual materials, and similar materials); equipment expenditures (audiovisual and computer hardware and similar items); and expenditures for supplies, binding, and all other non-wage and -salary items.

SOURCE: U.S. Department of Education, Center for Education Statistics, *Statistics of Public and Private School Library Media Centers, 1985–1986 (with historical comparisons from 1958–1985)*, April 1987.

CHART 1:15—Percentage of public schools with library media centers: 1958-85



SOURCE: Center for Education Statistics, *Statistics of Public and Private School Library Media Centers, 1985-86 (with historical comparisons from 1958-1985).*

- The proportion of public schools with library media centers grew substantially between 1958 and 1985, from 50 to 93 percent.

Staff employed in public school systems

Operating today's public school systems involves the employment of a large variety of personnel besides teachers, from district-level administrators to building maintenance workers. This indicator contrasts the changes in the number and proportion of teachers to total staff since 1959–60 and discusses the types of personnel employed in school year 1985–86.

Over the last few decades, the number and types of staff employed by the public school systems of this country have changed considerably. Between school years 1959–60 and 1985–86, total staff doubled (from about 2 million to a little over 4 million). The number of teachers employed grew substantially (from 1.4 million to 2.2 million), but their proportion of the total staff declined during the period, from 65 percent to 53 percent, as the hiring of other types of administrative and support staff increased more rapidly.

This growth in staff is partly a reflection of student enrollment, though the increase in total staff continued during the 1970's when enrollment declined. Other factors were at work, among them: (a) a steady reduction in the pupil/teacher ratios; (b) legislation in the 1960's and 1970's that resulted in new educational programs requiring specialized personnel; and (c) the increased use of teacher aides and other instructional personnel, beginning in the early 1960's.

The number of full-time-equivalent (FTE) staff employed in public school systems in school year 1985–86 stood at about 4.1 million. Classroom teachers were the dominant staff category, comprising more than 50 percent of the total. If instructional support staff (instructional aides, guidance counselors, and librarians) are added, instructional personnel account for more than 63 percent of total staff. Administrators and administrative support staff account for 13 percent, while other support staff (including, among others, bus drivers, security officers, and cafeteria workers) make up approximately 24 percent of total staff.

These distributions have changed little in the last 4 years. Additional details on staff distribution for school years 1982–83 to 1985–86 may be found in appendix table 1:16-1. Definitions of staff categories are in the glossary.

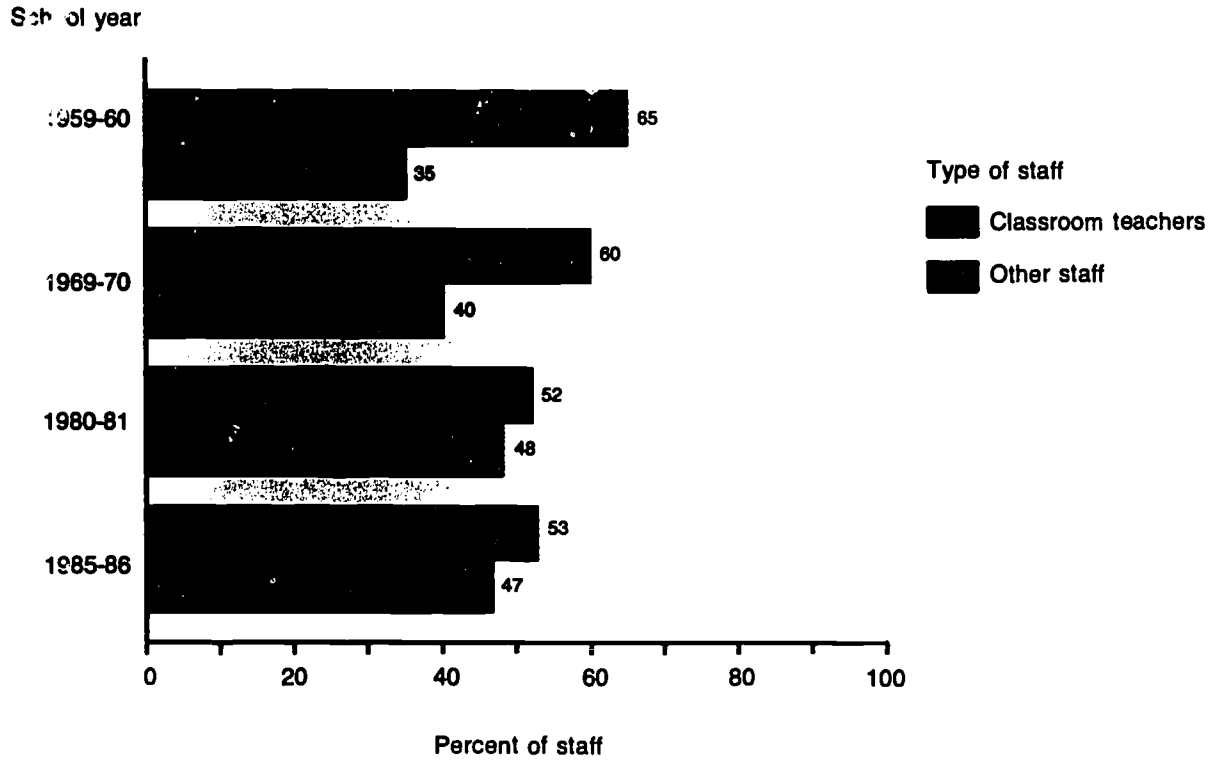
Table 1:16

Full-time-equivalent staff employed in public school systems: Selected years, 1959–60 to 1985–86

Type of staff	1959–60	1969–70	1980–81	1985–86
	(In thousands)			
Total	2,089	3,368	4,168	4,137
Classroom teachers	[1]1,353	2,023	2,184	2,210
Other staff[2]	736	1,344	1,984	1,927

[1]Includes a small number of teacher aides.
[2]Includes (a) instructional support staff, such as teacher aides, librarians, guidance counselors, principals, and assistant principals; (b) school district administrative staff, such as superintendents and their assistants, intermediate district staff, and supervisors of instruction; and (c) other support staff, such as clerical, transportation, food service, plant operation, and health staff.
NOTE: Detail may not add to totals due to rounding.
SOURCE: U.S. Department of Education, Center for Education Statistics, Statistics of State School Systems, various years, special tabulations, 1987.

CHART 1:16—Classroom teachers as a proportion of total public school staff: 1959-60 to 1985-86



SOURCE: Center for Education Statistics, *Statistics of State School Systems*, and special tabulations, 1987.

- Since 1959-60, the proportion of classroom teachers has declined from 65 percent to 53 percent of total staff in the public schools.

Pupil/teacher ratios

Relationships between the number of pupils enrolled in school and teachers hired to teach them are expressed in pupil/teacher ratios.[1] This indicator presents pupil/teacher ratios in public and private schools by size and type of school.

These ratios reflect the total number of pupils enrolled and the number of full-time-equivalent teachers, including those—such as art, music, and special education teachers—who do not have regular classroom assignments. However, pupil/teacher ratios do not reflect the educational services provided by staff outside the classroom, such as counselors and librarians.

See appendix table 1:17-1 for historical data showing the decline in pupil/teacher ratios in public schools. These data are available from a different data source than that used for table 1:17 below.

Pupil/teacher ratios varied by school level and size. Elementary schools had considerably higher pupil/teacher ratios than secondary schools, and the ratios in combined schools were somewhat lower than those in secondary schools.[2] Moreover, pupil/teacher ratios increased with school size. When the size and level of schools were taken into account, private schools did not have lower pupil/teacher ratios than public schools.[3]

[1]Another measure of the pupil/teacher relationship is class size, which represents the number of students in a classroom. Pupil/teacher ratios have tended to be lower than average class size. Class size data are collected by the National Education Association.

[2]Combined schools represent a much higher proportion of private than public schools.

[3]For public schools, the relationship between level and pupil/teacher ratio decreased with school size. For private schools, the reverse was the case—the relationship was strongest in the largest schools, those with 500 or more students.

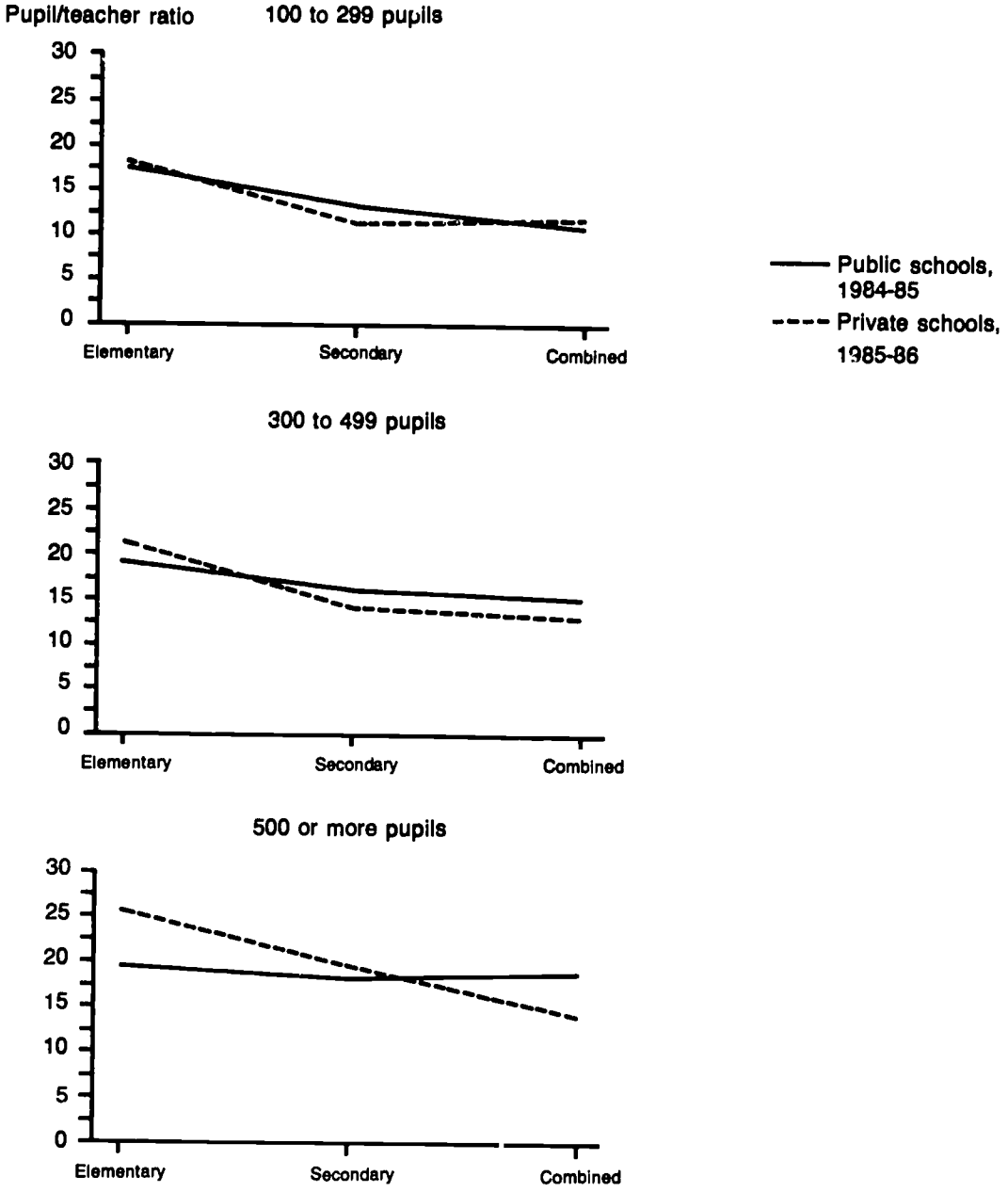
Table 1:17

Pupil/teacher ratios, by level, size and control of school

School level	Total	Number of students enrolled: Less than 100	100–299	300–499	500 or more
		Ratio			
Public schools, 1984–85					
All schools*	18.5	11.6	15.7	18.4	19.2
Elementary	19.3	—	17.5	19.2	20.0
Secondary	17.9	—	13.2	16.1	18.5
Combined	15.0	—	10.8	15.1	19.0
Private schools, 1985–86					
All schools*	17.5	12.2	16.0	17.8	20.2
Elementary	20.0	13.4	16.2	21.3	26.1
Secondary	17.2	—	11.3	14.1	19.8
Combined	12.7	10.6	11.8	12.9	14.2

—Too few cases for a reliable estimate.
*Does not include special education, alternative, and vocational/technical schools. Elementary schools contain no grade higher than 8. Secondary schools contain no grade lower than 7. Combined schools contain all other grade spans, such as K-12 or ungraded.
NOTE: Pupil/teacher ratios are based upon the number of pupils enrolled divided by the number of full-time-equivalent teachers.
SOURCE: U.S. Department of Education, Center for Education Statistics, 1985–86 Private School Survey and 1985 Public School Survey, unpublished tabulations.

CHART 1:17—Pupil/teacher ratios



SOURCE: Center for Education Statistics, 1985-86 Private School Survey and 1985 Public School Survey, unpublished tabulations.

- Pupil/teacher ratios vary with school level. They are highest in elementary schools and lowest in combined schools.
- Pupil/teacher ratios increase with school size.
- When size and level are taken into account, pupil/teacher ratios in public and private schools are not significantly different.

Demand for new hiring of teachers

The demand for new hiring of teachers is expected to rise principally because of student enrollment increases, pupil/teacher ratio improvements, and education reforms. This indicator estimates the anticipated demand for new hiring of teachers in all elementary and secondary schools. Enrollment increases are expected to create an overall increase in demand for additional teachers at the elementary level in the late 1980's. During the first half of the 1990's, elementary school demand is expected to level off slightly. Enrollment increases are expected to create a demand for more teachers at the secondary level in the first half of the 1990's. The projected numbers shown here depict national trends, but the demand for additional teachers will vary by geographical location and subject area as States experience different rates of enrollment growth over the projection period.

The estimation and projection of demand for new hiring of classroom teachers depends upon three major variables: pupil/teacher ratios, enrollment levels, and teacher turnover, including retirement. Of these three components, teacher turnover rates are the hardest to estimate because there is no current national survey from which to derive this information. Teacher turnover rates were estimated to compensate for this lack of data. To project the demand for new hiring of teachers, estimates were based on replacement rate data for full-time teachers with 4 or more years of college in 1983, obtained from the Bureau of Labor Statistics.

Table 1:18

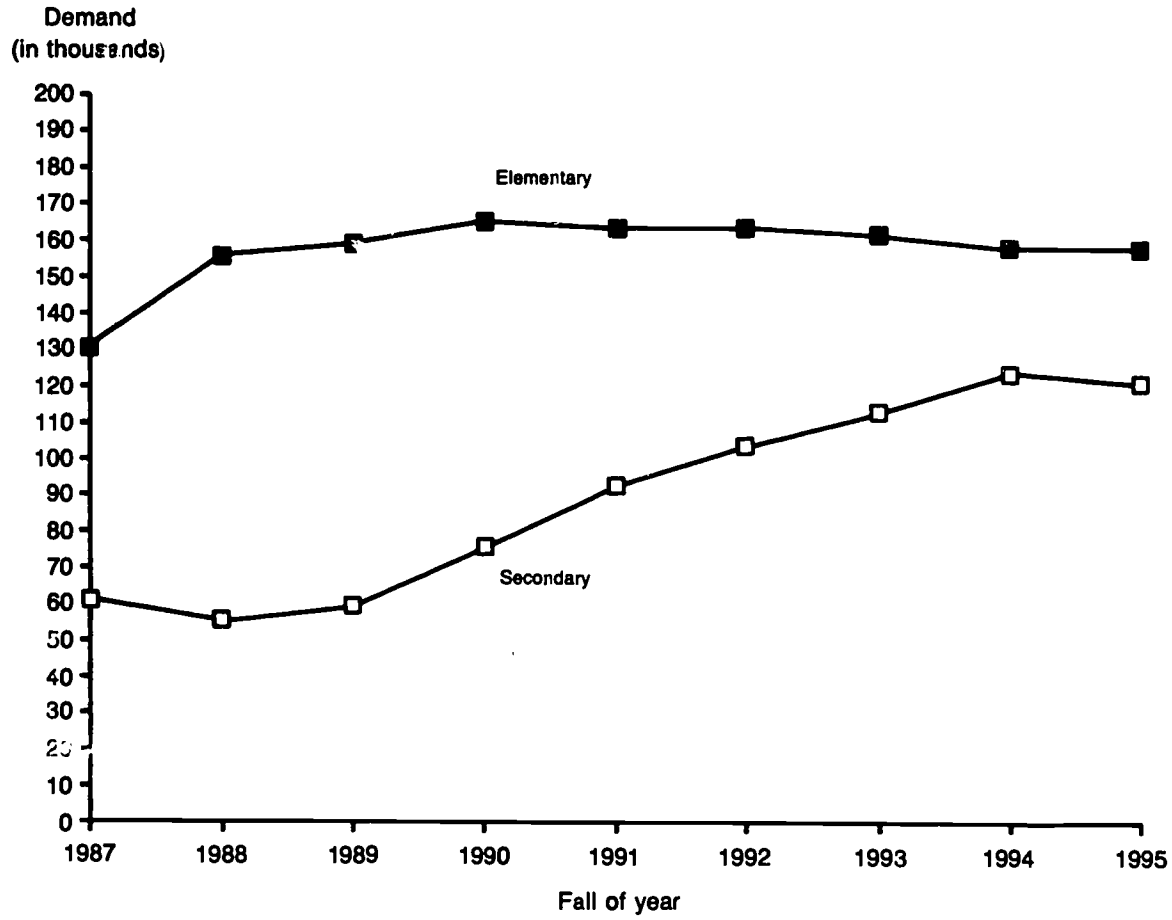
Trends in the demand for hiring more classroom teachers in elementary/secondary schools: 1987 to 1995

Fall of year	Projected demand for more teachers* (in thousands)		
	Total	Elementary	Secondary
1987	192	131	61
1988	211	156	55
1989	218	159	59
1990	240	165	75
1991	255	163	92
1992	266	163	103
1993	273	161	112
1994	281	157	123
1995	277	157	120

*See Sources of Data in appendix C for projection methodology.
NOTE: Details may not add to totals due to rounding.
SOURCE: U.S. Department of Education, Center for Education Statistics, (special tabulations, December 1986).

These projections of demand for new hiring of teachers are based on a 7.5 percent turnover rate for elementary teachers and 6.5 percent for secondary teachers. Teacher turnover rates have been held constant over the projection period.

CHART 1:18—Trends in projected demand for new hiring of teachers, by level



SOURCE: Center for Education Statistics, unpublished forecasts.

- The projected demand for new hiring of elementary school teachers is expected to increase in the late 1980's and then decline in the first half of the 1990's.
- The projected demand for new hiring of secondary school teachers is expected to increase in the first half of the 1990's.

Employment of recent college graduates as teachers

Over the past few years, the number of college students who have pursued teaching opportunities following graduation has steadily declined. Although the total number of students in institutions of higher education has been increasing, fewer students are majoring in education, and fewer are choosing teaching as a career. Other occupational choices, which may offer more prestige or higher salaries, have become increasingly popular. There is evidence, however, that college students recently have begun to show renewed interest in teaching as a career.[1] This indicator shows the number and proportion of bachelor's recipients who were teaching in the year following graduation for 1981 (1979–80 graduates) and 1985 (1983–84 graduates), by major field of study in college.

While the number of graduates increased by about 49,000 during that time period, the number of recent bachelor's degree recipients who taught in the year following graduation declined by about 11,500. This decline reflected a 25 percent decrease in the number of education majors (though the proportion of these majors going into teaching remained fairly steady). Partially offsetting the decline (by almost 18,000) in the number of education majors who were teaching was a 6,000 increase in the number of noneducation majors who went into teaching. Overall, the proportion of newly graduated teachers who had majored in education declined from an estimated 82 percent (in 1981) to an estimated 72 percent (in 1985).

In both 1981 and 1985, the overwhelming majority of newly graduated teachers were education majors. However, the proportion who were noneducation majors rose considerably in the interim—from 18 to 28 percent. In 1985, a much higher proportion of secondary than elementary teachers were noneducation majors—39 vs. 19 percent. Of the 1983-84 education majors who worked full time at an occupation other than teaching in 1985, approximately half were in nonprofessional occupations, such as sales and clerical work, and 14 percent worked as professionals in business. The remaining 36 percent worked full-time in a wide variety of occupations. Half of all education majors who were not teaching (including those not working) said they were unable to obtain employment related to their college studies. An additional 28 percent said that other fields offered better opportunity for advancement or better pay.[2]

Not all education majors worked full-time after receiving their bachelor's degrees. About 1 in 8 was working part time, and about 1 in 14 was enrolled in school. The remaining education majors were not in the labor force (4 percent), were unemployed (2 percent), or were in the military (1 percent).[3] Indicator 2:7 compares the postgraduate activities of education majors and college graduates who majored in other fields.

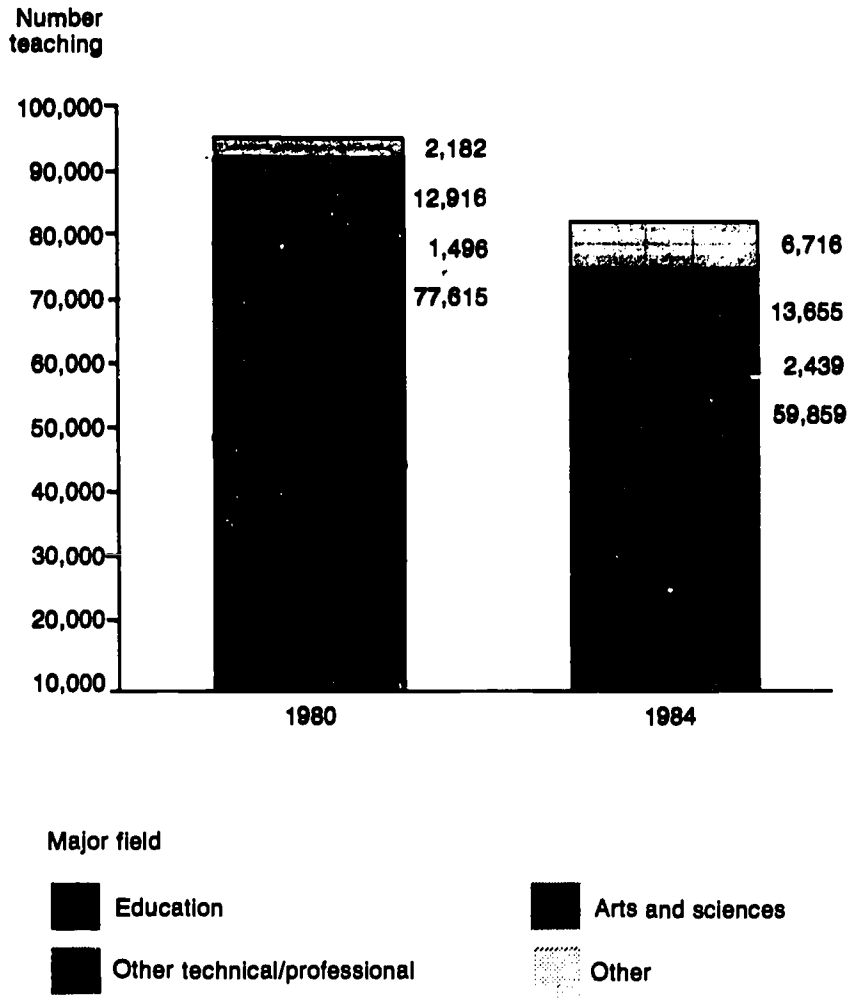
[1]Higher Education Research Institute, *The American Freshman: National Norms for Fall 1986* (Los Angeles, CA: Graduate School of Education, University of California, 1986), p. 4.
[2]U.S. Department of Education, Center for Education Statistics, Recent College Graduates Survey, 1985, special tabulations.
[3]Ibid.

Table 1:19
Number and percent of recent bachelor's degree recipients who taught, by major field: 1981 and 1985

Major field	1979–80 graduates			1983–84 graduates			Change in number of new graduates teaching, 1981–85
		Teaching in 1981			Teaching in 1985		
	Total	Number	Percent	Total	Number	Percent	
Total	905,663	94,209	10.4	955,273	82,669	8.7	−11,540
Technical/professional	476,878	79,111	16.6	495,912	62,298	12.6	−16,813
Engineering	66,975	0	0.0	87,717	256	0.3	256
Business/management	188,678	361	0.2	224,070	705	0.3	344
Health	65,508	1,105	1.7	66,657	1,182	1.9	77
Education	129,859	77,615	59.8	96,551	59,859	62.0	−17,756
Public affairs/social services	25,856	30	0.1	23,917	296	1.2	266
Arts and sciences	307,525	12,916	4.2	292,038	13,655	4.7	739
Biological sciences	53,486	1,465	2.7	47,008	1,664	3.5	199
Physical sciences and mathematics	39,779	1,266	3.2	22,807	427	1.9	−839
Psychology	40,350	1,529	3.8	45,310	1,600	3.5	71
Social sciences	93,351	2,595	2.8	93,846	4,443	4.7	1,848
Humanities	80,559	6,061	7.5	83,067	5,521	6.6	−540
Other	121,260	2,182	1.8	167,323	6,716	4.0	4,534
Communications	20,372	0	0.0	43,395	828	1.9	828
Miscellaneous*	100,888	2,182	2.2	123,928	5,888	4.8	3,706

*Includes agriculture and natural resources, architecture, home economics, law enforcement, and interdisciplinary studies.
SOURCE: U.S. Department of Education, Center for Education Statistics, Recent College Graduates Survey, various years, special tabulations.

CHART 1:19—Recent bachelor's degree recipients who were teaching, by major field and year of graduation



SOURCE: Center for Education Statistics, Recent College Graduates Surveys, various years, special tabulations.

- The number of recent bachelor's degree recipients who were teaching approximately a year following graduation declined substantially for 1984 graduates compared with 1980 graduates.
- The proportion of newly graduated teachers who had majored in education decreased. An increasing proportion of graduates in other fields went into teaching, such as graduates who majored in the social sciences, communications, and miscellaneous fields.

Average annual salary of public school teachers

Reports of teacher shortages in selected specialties and the possibility of a general teacher shortage in the future have increased the perceived importance of teacher salaries as an incentive in attracting and retaining capable teachers. This indicator portrays average annual teacher salaries in public schools from 1960-61 to 1985-86 in both current and constant 1985-86 dollars.[1] Teacher salaries are reported by the States for regular elementary and secondary classroom teachers and are generally based on 9- or 10-month contracts.

Teacher salaries have begun to rise after a general decline during the 1970's. At that time, teacher beginning salaries were lower than those of most other fields requiring a bachelor's degree. Also, the value of teacher salaries eroded compared with other occupation's salaries during this period.

In response to recent education reform efforts, State governments have increased spending on education. Some States had already increased teacher salaries, and others were considering doing so to attract more or better teachers. In recent years, average teacher salaries have risen more rapidly. According to the National Education Association, the national average for teacher salaries was $25,313 in 1985–86, and all States and the District of Columbia reported increases in average salaries over the previous year.[2] Between 1980–81 and 1985–86, teacher salaries have increased 43 percent in current dollars and 14 percent in constant 1985–86 dollars. For all workers with 4 years of college and over, the percentage increases were 26 percent and 10 percent, respectively.

A 1986 study by C. Emily Feistritzer examines the daily earnings between teachers and U.S. workers.[3] Applying her methodology to the data in table 1:20, the daily pay rate for public school teachers in 1984–85 calculated on the basis of 186 contract days (180 teaching days plus 6 nonteaching days) was $127. This compares with a 1984 daily earnings rate of $131 for all workers with 4 years of college or more, calculated on the basis of an average work year of 240 days (5 days x 50 weeks less 10 days for holidays, assuming 2 weeks for vacation).

[1]Teacher salaries do not include other earnings.

[2]National Education Association, *Estimates of School Statistics 1985–86*, 1986, copyrighted.

[3]Feistritzer, C.E., *Profile of Teachers in the U.S.*, National Center for Education Information, 1986.

NOTE: These salary data of public school teachers are from the National Education Association. The reader should note that salary data are also collected and published by the American Federation of Teachers. Their latest research report is *Survey & Analysis of Salary Trends, 1986.*

Table 1:20

Estimated average annual salaries of classroom teachers in public elementary and secondary schools, by level: Selected years 1960–61 to 1985–86

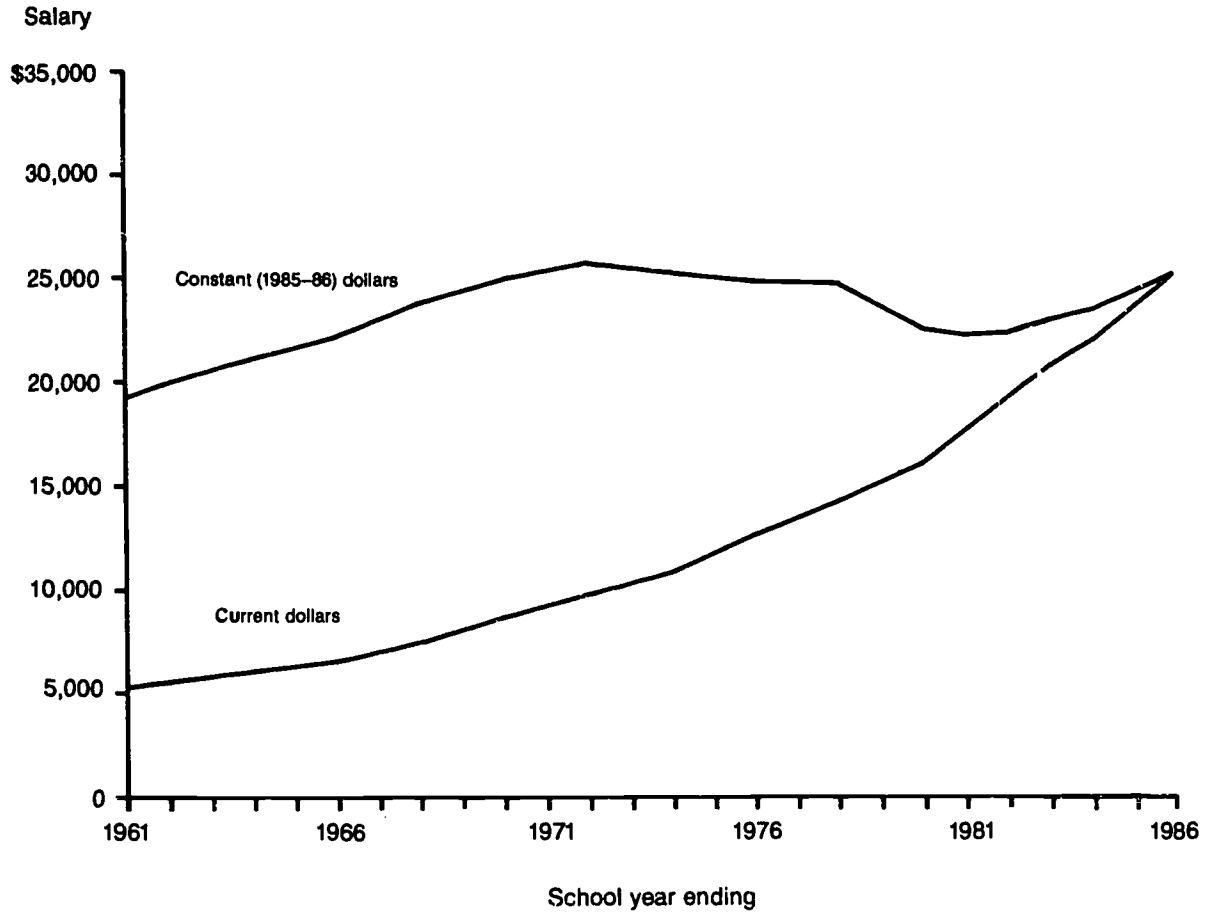
School year	Current dollars			Constant (1985–86) dollars[1]		
	All teachers	Elementary teachers	Secondary teachers	All teachers	Elementary teachers	Secondary teachers
1960–61	$5,275	$5,075	$5,543	$19,286	$18,555	$20,266
1961–62	5,515	5,340	5,775	19,958	19,325	20,899
1963–64	5,995	5,805	6,266	21,140	20,470	22,096
1965–66	6,485	6,279	6,761	22,099	21,397	23,040
1967–68	7,423	7,208	7,692	23,744	23,056	24,605
1969–70	8,635	8,412	8,891	24,878	24,236	25,616
1971–72	9,705	9,424	10,031	25,665	24,921	26,527
1973–74	10,778	10,507	11,077	25,146	24,514	25,844
1975–76	12,600	12,280	12,937	24,718	24,090	25.379
1977–78	14,198	13,845	14,603	24,668	24,055	25,372
1979–80	15,970	15,569	16,459	22,386	21,824	23,071
1980–81	17,644	17,230	18,142	22,169	21,649	22,794
1981–82	19,274	18,853	19,805	22,284	21,797	22,898
1982–83	20,700	20,207	21,322	22,946	22,400	23,636
1983–84	21,918	21,456	22,554	23,432	22,938	24,112
1984–85	23,595	23,201	24,225	24,280	23,875	24,929
1985–86	25,313	24,781	26,033	25,313	24,781	26,033

[1]Based on the Consumer Price Index, prepared by the U.S. Department of Labor, Bureau of Labor Statistics; adjusted to school year basis by Center for Education Statistics.

NOTE: Data for some recent years have been revised from previously published figures.

SOURCE: National Education Association, *Estimates of School Statistics 1985–86*, 1986, copyrighted, and unpublished tabulations.

CHART 1:20—Trends in average annual salaries of teachers in public schools



SOURCE: National Education Association, *Estimates of School Statistics 1985–86*, copyrighted.

- The average salary of public school teachers, when adjusted for inflation, declined in the 1970's but has risen since then.

Teachers' earnings compared to other professional workers'

The issue of teacher quality requires schools to seriously consider compensation as a key element in attracting and holding more able teachers. The following tables and chart present teacher earnings (both salaries and compensation from other activities during a 12-month period) in the context of earnings by others. The first table compares teachers' earnings with earnings of other workers in selected occupations from 1982 to 1985. The second table compares earnings of other workers in selected occupations to teacher earnings, converted to a ratio with the earnings of teachers as the base of reference equal to 1.00. A ratio greater than 1.00 indicates that the workers' earnings exceed those of teachers while a ratio less than 1.00 means that teachers earn more. Comparisons are made between the total earnings of teachers in both public and private schools and (1) other professionals as well as (2) workers whose jobs do not require a college degree. Distinctions are made between males and females in all fields since their earnings are significantly different.

These data, however, have limitations. For example, earnings shown are for 12 months, and it is not known to what extent earnings for teachers (who normally work under 9- or 10-month contracts) have been augmented by earnings from part-time or summer jobs.

NOTE: The total earnings of teachers in both public and private schools in this table are not comparable to teacher salary data of public school teachers in table 1:20. This may be attributable, in part, to the following reasons: (1) teacher salary data are shown for public schools only and do not include other earnings; (2) teacher salary data shown are for 9–10 months, while total teacher earnings are for 12 months; (3) total teacher earnings include earnings of private nursery and kindergarten teachers; and (4) total teacher earnings are based on data obtained from the Current Population survey; teacher salary data are based on a survey of State education agencies.

Table 1:21A

Earnings of teachers and workers in other selected occupations, by sex: 1982–85

(In constant 1985 dollars)

Occupation held longest during the year	Men				Women			
	1982	1983	1984	1985	1982	1983	1984	1985
Teachers	$23,593	$24,181	$25,758	$25,575	$19,069	$19,754	$20,869	$20,810
All full-time workers	23,364	23,393	23,892	24,195	14,428	14,876	15,209	15,624
Professional specialty	30,972	31,588	32,336	32,688	20,422	20,529	21,506	21,781
Engineers	36,155	35,346	36,335	36,615	27,132	29,132	28,666	31,361
Natural scientists & mathematicians	33,609	33,517	32,304	34,632	26,870	27,491	25,375	28,530
Health workers (except diagnosing)	24,805	26,335	27,155	29,017	21,580	21,845	22,590	23,075
Executive, administrative, & managerial	31,947	32,540	33,091	32,872	19,206	19,540	19,408	20,565
Accountants & auditors	29,647	30,417	31,208	30,098	19,115	19,879	19,833	20,364
Technical and sales	23,722	24,051	24,581	24,957	13,938	14,456	14,698	15,117
Administrative support, clerical	22,733	22,272	22,783	22,997	14,070	14,404	14,836	15,157
Precision production, craft & repair	23,182	23,007	23,236	23,269	15,066	14,180	14,177	15,093
Operators	19,092	19,050	19,173	19,648	12,226	12,103	12,196	12,309

NOTE: Based on the revised Census Occupational Classification System implemented in 1982.

SOURCE: U.S. Department of Commerce, Bureau of the Census, *Current Population Reports*, "Money Income of Households, Families, and Persons in the United States: 1982 through 1985," Series P-60.

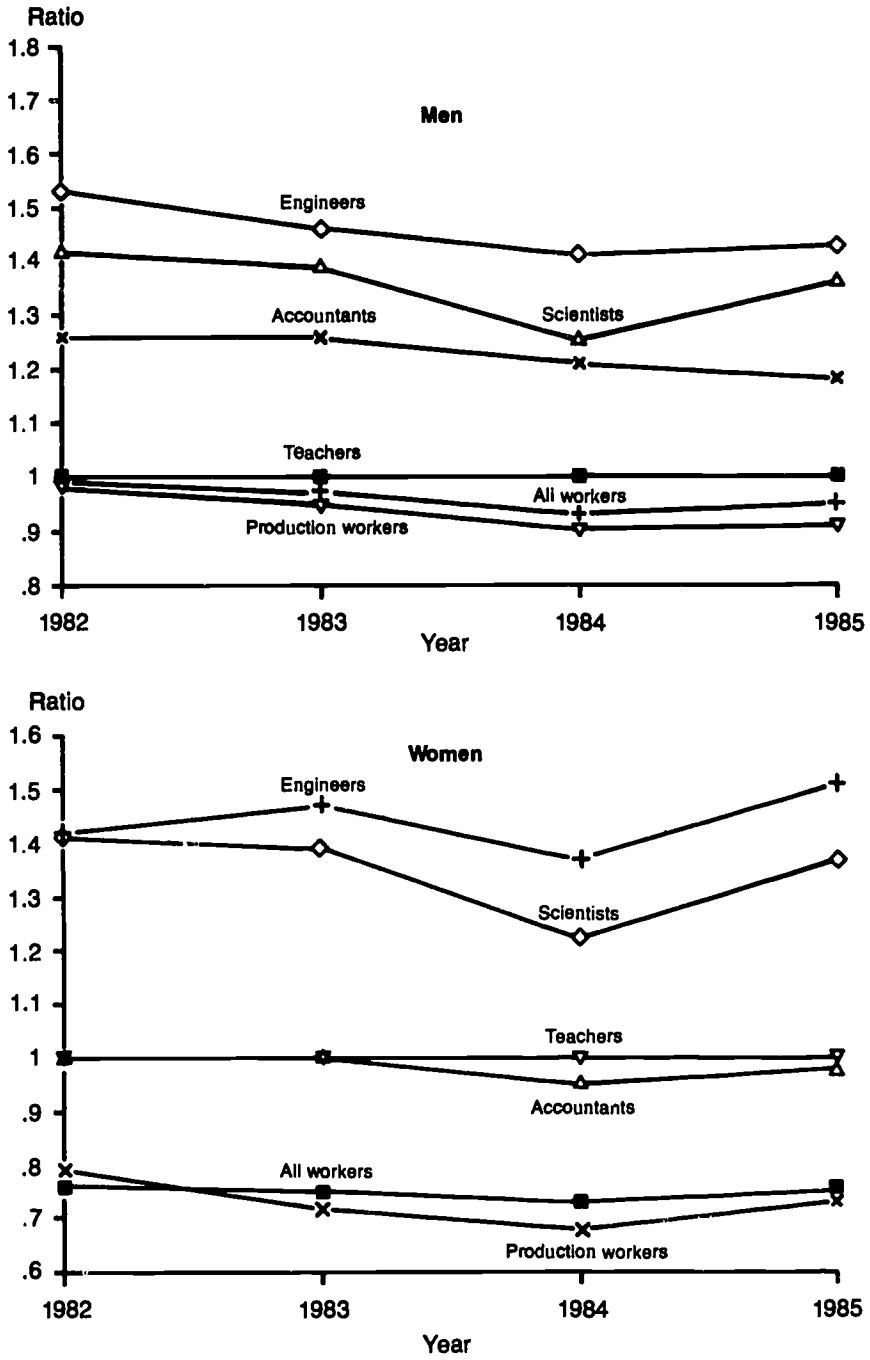
Table 1:21B

Ratio of earnings of other workers in selected occupations to teacher earnings, by sex: 1982–85

Occupation held longest during the year	Men				Women			
	1982	1983	1984	1985	1982	1983	1984	1985
Teachers	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
All full-time workers	.99	.97	.93	.95	.76	.75	.73	.75
Professional specialty	1.31	1.31	1.26	1.28	1.07	1.04	1.03	1.05
Engineers	1.53	1.46	1.41	1.43	1.42	1.47	1.37	1.51
Natural scientists & mathematicians	1.42	1.39	1.25	1.35	1.41	1.39	1.22	1.37
Health workers (except diagnosing)	1.05	1.09	1.05	1.13	1.13	1.11	1.08	1.11
Executive, administrative, & managerial	1 35	1.35	1.28	1.29	1.01	.99	.93	.99
Accountants & auditors	1.26	1.26	1.21	1.18	1.00	1.00	.95	.98
Technical and sales	1.01	.99	.95	.98	.73	.73	.70	.73
Administrative support, clerical	.96	.92	.88	.90	.74	.73	.71	.73
Precision production, craft & repair	.98	.95	.90	.91	.79	.72	.68	.73
Operators	.81	.79	.74	.77	.64	.61	.58	.59

NOTE: Note and source for table 1:21A also apply to this table.

CHART 1:21—Ratio of earnings of other workers to teacher earnings, by selected occupation: 1982 to 1985



SOURCE: Bureau of the Census, Current Population Reports.

- For male workers, earnings of engineers, scientists, and accountants exceeded those of teachers, while earnings of all full-time workers and production workers were below those of teachers.
- For female workers, earnings of engineers and scientists exceeded those of teachers, while earnings of all full-time workers and production workers were below those of teachers.

Characteristics of private and public school teachers

There is little argument over the centrality of the role played by the teacher in the learning process. The States have demonstrated their concern about teacher quality by establishing teacher certification standards, and teacher salaries form the single biggest operating expenditure in most school budgets. This indicator presents some descriptive characteristics of teachers. The table below (1:22) shows sex, race/ethnicity, highest degree, and teaching experience for full-time public and private school teachers.

Clearly, the teaching force is largely female and white. The proportion of black teachers is somewhat higher in public than in private schools.[1]

Few teachers, public or private, have less than a bachelor's degree (under 5 percent). Public school teachers are more likely to have an advanced degree than their private school counterparts (48 percent versus 30 percent).[2]

Compared with private school teachers, where fewer than half (45 percent) have worked more than 10 years, public school teachers as a group have more years on the job, with 68 percent having 10 or more years of experience. Among private school teachers, teachers in Catholic schools tend to be more experienced than teachers in other religious schools (52 as compared with 37 percent having 10 or more years of teaching experience).

[1]The difference between public and private schools in the percent of male and female teachers is not statistically significant.

[2]Public school teachers are more than twice as likely to have an advanced degree at the elementary level than are private school teachers. However, in secondary schools, there is no difference between public and private school teachers in the proportion holding advanced degrees (about one-half).

Table 1:22

Selected characteristics of public and private school teachers, by sex, race/ethnicity, highest degree, and years of teaching experience

Teacher characteristic	Public schools, 1984–85	Private schools, 1985–86			
		Total	Catholic	Other religious	Nonsectarian
			Percent		
Total	100	100	100	100	100
Sex					
Male	32	25	20	30	28
Female	68	75	80	70	72
Race/ethnicity					
White, non-Hispanic	86	91	92	91	89
Black, non-Hispanic	10	4	3	4	6
Other[1]	4	4	4	4	3
Not reported	1	1	1	1	2
Highest degree					
Less than bachelor's	1	4	3	7	4
Bachelor's	51	66	68	67	60
More than bachelor's	48	30	30	26	36
Years of full-time teaching experience[2]					
Less than 5	12	29	25	33	33
5–9	21	27	24	30	28
10 or more	68	45	52	37	39

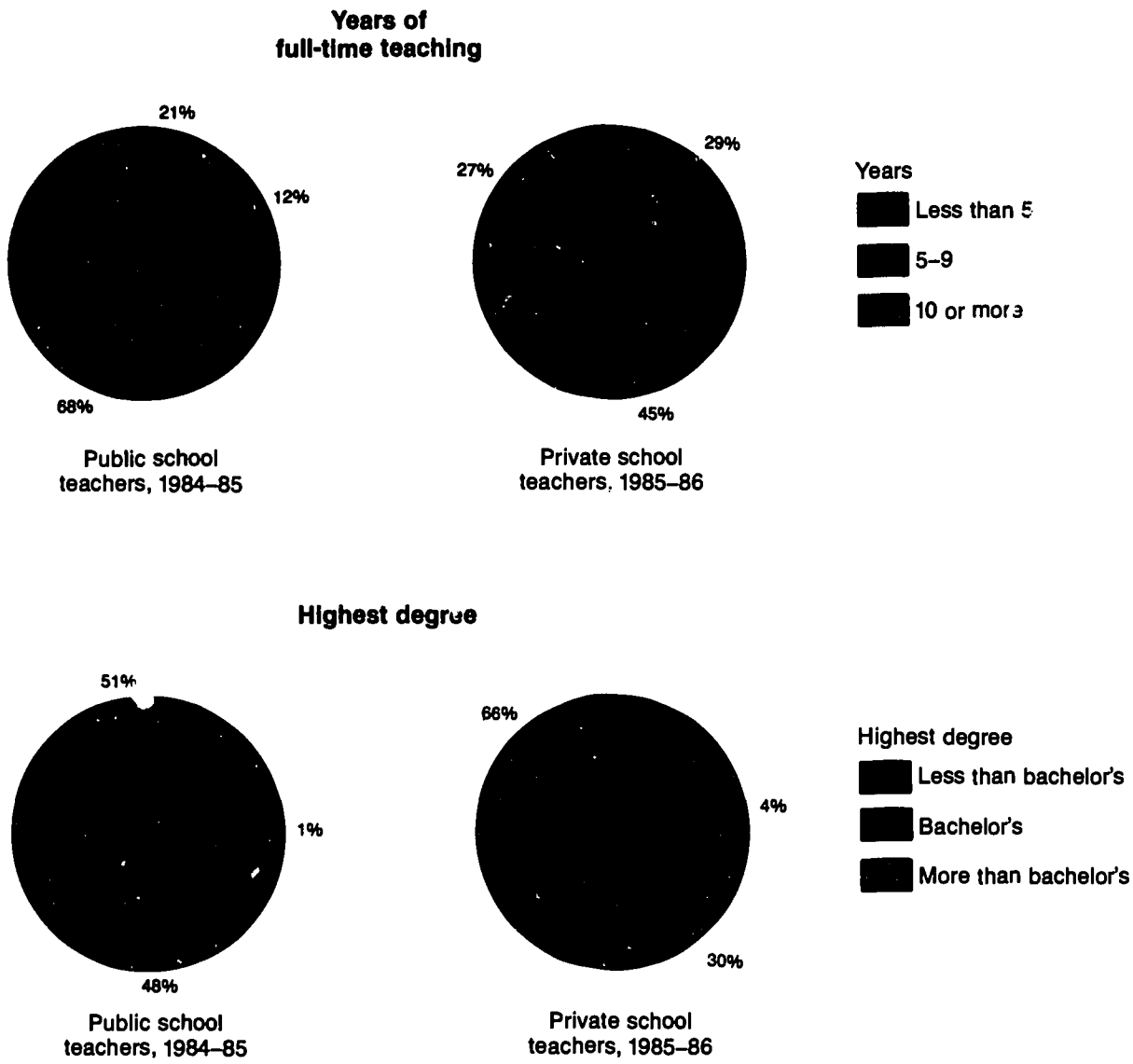
NOTE: These two surveys have not been conducted annually. This indicator compares the most recent data available. Data cover only full-time school staff with teaching as a primary assignment. Detail may not add to totals due to rounding.

[1]Includes Hispanic, American Indian or Alaskan Native, and Asian or Pacific Islander.

[2]Includes full-time teaching for less than the entire school year for some private school teachers. Differences in experience between public and private school teachers might appear to be somewhat greater if the only experience included in the data for private school teachers was full-time, full-year teaching.

SOURCE: U.S. Department of Education, Center for Education Statistics, 1985 Public School Survey and 1985–86 Private School Survey, unpublished tabulations.

CHART 1:22—Years of teaching experience and highest degree of public and private school teachers



NOTE: Only includes teachers employed full time and teaching full time.

SOURCE: Center for Education Statistics, 1985 Public School Survey and 1985–86 Private School Survey

- Private school teachers are less likely to have more than a bachelor's degree and to have 10 or more years of teaching experience than are public school teachers.

Teachers' school-related activities

Since the official school day tends to be shorter than the work day found in many occupations, people may assume that teachers work fewer hours per week than most workers. However, teachers often meet the demands of class preparation, paper grading, club activities, and the like outside of regular school hours.

Table 1:23 shows the average number of hours worked in a week as reported by both public and private school teachers, and how the total breaks down according to hours within and outside of required school time. On the average, teachers logged a 50-hour workweek during the school year.

The patterns for time spent on school-related activities were very similar for public and private school teachers. In fact, the total hours each spent on such activities were about the same. Both spent about one-half of their time on classroom teaching and one-fourth on activities outside of required school hours. Two activities directly related to classroom teaching--preparing for class and reviewing/grading student work--consumed substantial portions of teachers' time and were more likely to be done outside of required school hours for both public and private school teachers. Other, less time-consuming activities included monitoring students, tutoring, performing administrative tasks, and coaching or advising on extracurricular activities.

Table 1:23

Number of hours teachers spent per week on school-related activities within and outside required school hours

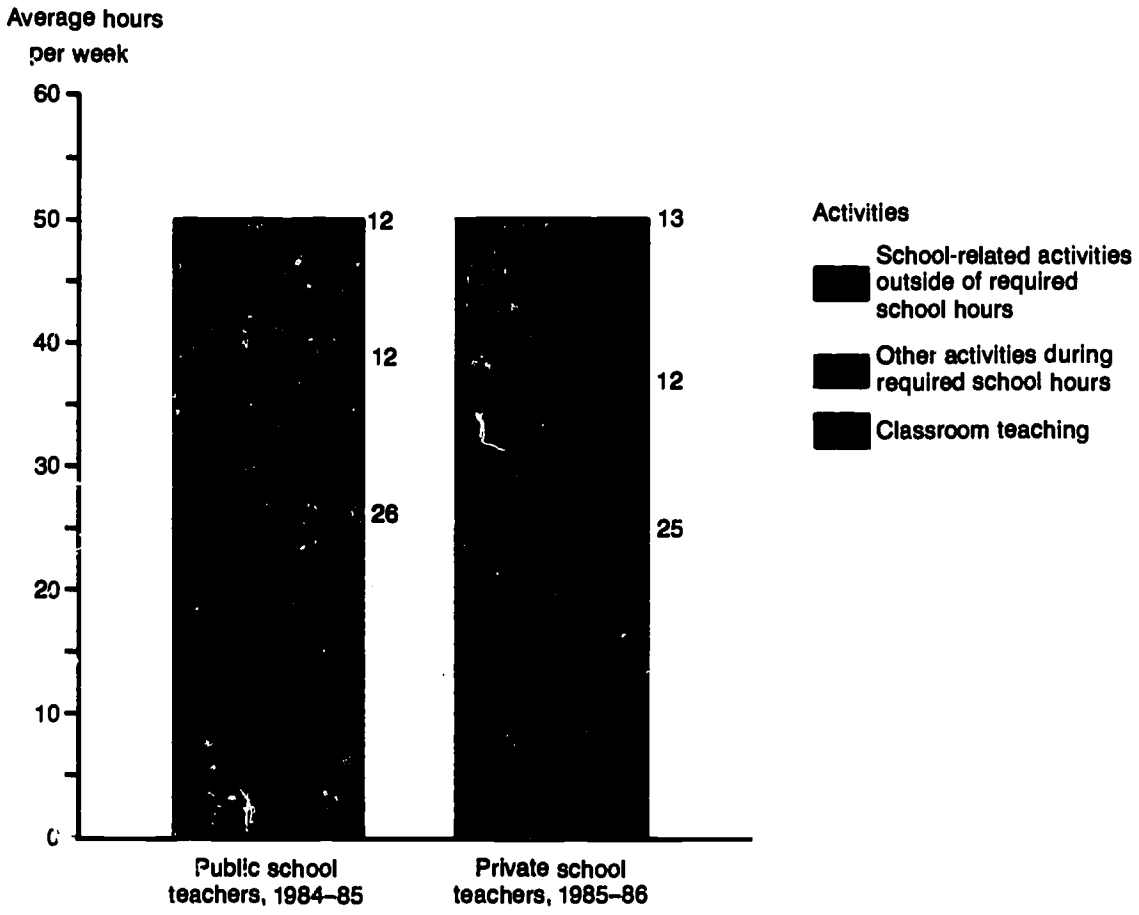
School-related activities	Public school teachers, 1984–85	Private school teachers, 1985–86
	Average hours during most recent week*	
Total	50	50
During required school hours	39	37
Classroom teaching	26	25
Outside of required school hours	12	13

*Reported by public and private school teachers. Data cover full-time school staff whose primary assignment was teaching.

NDTE: Detail may not add to totals due to rounding.

SOURCE: U.S. Department of Education, Center for Education Statistics, *ED-TABS: The 1985 Public School Survey, Early Tabulations* (November 1986) and *Private Schools and Private School Teachers: Final Report of the 1985–86 Private School Study*, 1987.

CHART 1:23—Average hours per week spent by full-time teachers on school-related activities



SOURCE: Center for Education Statistics, *ED-TABS: The 1985 Public School Survey, Early Tabulations,* and *Private Schools and Private School Teachers: Final Report of the 1985–86 Private School Study.*

- Both public and private school teachers averaged about 50 hours per week on school-related activities, about a quarter of which were devoted to activities outside of required school hours.

C. Context: Student Characteristics

Public and private school enrollment trends

Between 1970 and 1985, total enrollment in both public and private schools declined 14 percent.[1] Public school enrollment followed a generally downward path throughout the period, whereas private school enrollment followed a more erratic one.

Elementary enrollment dropped sharply in both public and private schools in the 1970's but underwent little to no change in the first half of the 1980's.[2] High school enrollment in public schools rose in the early and mid-1970's and then turned downward, continuing on that path through most of the first half of the 1980's. Private school enrollment at the high school level, however, changed little during the 1970–85 period.

Relative to total enrollment, private school enrollment has not changed greatly over the past decade and a half. In fact, the proportion of private school students was the same in 1985 as it had been in 1970, following a decrease during the 1970's and an increase during the first half of the 1980's. In 1985, about one in nine students in kindergarten through grade 12 attended a private school.[3] The proportion of private school students was higher at the elementary than at the high school level.

[1]See Indicator 1:25 for a discussion of projected public school enrollments to 1995. Projected enrollments are not available for private schools.

[2]An unexplained drop occurred in the number and proportion of private school students in 1984, according to the Bureau of the Census. However, the 1984 data appear to be an anomaly, since the 1985 figures for private school students are very similar to those for 1983 and are consistent with the trend for 1979 to 1983.

[3]There are two major sources of national data on private school enrollment: the annual School Enrollment Supplement to the October Current Population Survey (CPS) and intermittent Private School Surveys conducted by the Center for Education Statistics. The two sources sometimes produce differing estimates of the total number and proportion of private school students. For example, the 1985 Private School Survey reported that 12.3 percent of K-12 students were enrolled in private schools; CPS estimated 10.9 percent. CPS data were used in this indicator to analyze trends in enrollment, because they are the only available data which are consistent over time. For further discussion of data sources on private school enrollment, see Mary Frase Williams, "Private School Enrollment and Tuition Trends," in U.S. Department of Education, *The Condition of Education, 1986 Edition*, pp. 186–207.

Table 1:24

Public and private school K-12 enrollment: 1970–85

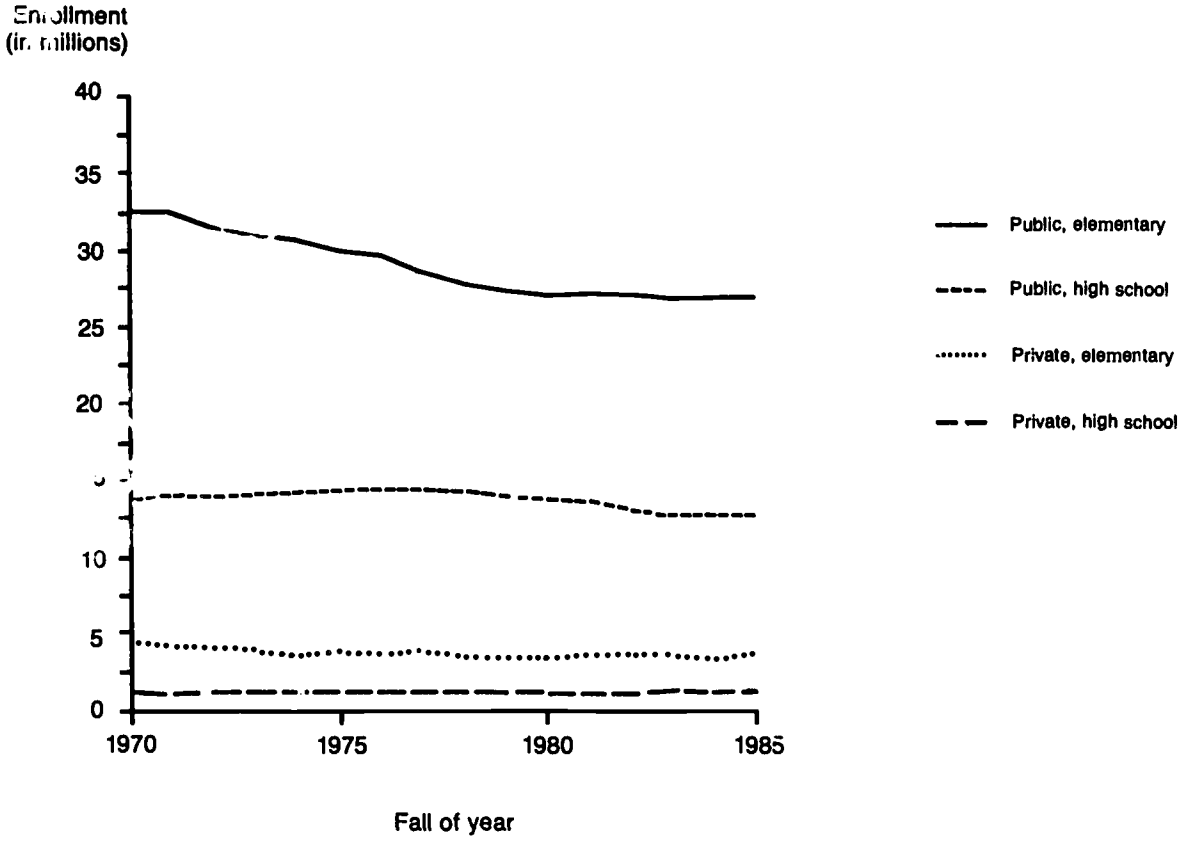
Year (fall)	Total	Public school		Private school			Private school enrollment as a percent of total enrollment		
		K-8	9-12	Total K-12	K-8	9-12	Total K-12	K-8	9-12
	Enrollment (in millions)						Percent		
1970	46.2	32.6	13.5	5	4.5	1.2	10.9	12.1	8.0
1971	46.6	32.5	14.1	[illegible]	4.3	1.1	10.4	11.6	7.4
1972	45.3	31.3	14.0	[illegible]	4.0	1.2	10.3	11.4	7.6
1973	44.9	30.8	14.2	[illegible]	[illegible]	1.2	9.9	10.9	7.7
1974	45.0	30.7	14.3	[illegible]	[illegible]	1.2	9.8	10.7	7.6
1975	44.5	30.0	14.5	[illegible]	5.8	1.2	10.1	11.3	7.5
1976	44.2	29.7	14.5	4.8	3.6	1.2	9.8	10.8	7.6
1977	43.2	28.6	14.5	5.0	3.8	1.2	10.4	11.6	7.9
1978	42.0	27.7	14.2	5.0	3.7	1.2	10.6	11.9	8.0
1979	41.3	27.3	14.0	4.7	3.5	1.1	10.1	11.5	7.4
1980	—	27.1	—	—	3.5	—	—	11.5	—
1981	40.9	27.4	13.5	4.7	3.6	1.1	10.3	11.6	7.6
1982	40.1	27.1	13.0	4.7	3.6	1.1	10.5	11.7	7.9
1983	39.7	26.9	12.8	4.9	3.7	1.2	10.9	11.9	8.7
1984	39.8	27.1	12.7	4.3	3.2	1.1	9.8	10.7	7.7
1985	39.8	27.0	12.8	4.9	3.7	1.2	10.9	11.9	8.7

—Not available.

NOTE: Detail may not add to totals due to rounding.

SOURCE: U.S. Department of Commerce, Bureau of the Census, Current Population Reports, *School Enrollment—Social and Economic Characteristics of Students: October 1985, (Advance Report)* (Series P-20, No. 409) and *October 1984 (Advance Report)* (Series P-20, No. 404)

CHART 1:24—Public and private school enrollment, by grade level: 1970–85



SOURCE: Bureau of the Census, Current Population Reports.

- Elementary school enrollment dropped during the 1970's in both public and private schools but underwent little to no change in the first half of the 1980's.
- High school enrollment in public schools rose during the early and mid-1970's but then turned downward.
- Private school enrollment at the high school level changed little from 1970 to 1985.

C. Context: Student Characteristics

Trends in public school enrollment: 1969 to 1995

The number of students enrolled in public elementary and secondary schools reflects the level of demand for teachers, facilities, and other educational resources. Changes in enrollment levels produce a variety of challenges to school administrators.

Public elementary and secondary enrollment declined steadily through the 1970's and early 1980's as the large postwar birth cohort moved through and out of the educational system. Elementary school (K–8)[1] enrollments reached a record high in 1969, while secondary school (9–12) enrollments peaked in 1976. By 1984, elementary enrollments were down 17 percent from the record high and secondary enrollments dropped 14 percent from their record high.

As of fall 1985, however, elementary school enrollments began to increase nationally, as more and more offspring of the postwar generation began to attend school.[2] The annual number of births in the United States, which had been declining since 1960, began to rise in 1976 and is projected to continue increasing through 1987.[3] This increase has resulted in a new cohort of children that will swell the ranks of elementary school students well into the 1990's. As this cohort ages, secondary enrollments will also begin to rise in 1991.[4]

[1]The Center for Education Statistics' estimates of school enrollment include most kindergarten and some nursery school enrollment.

[2]Secondary enrollments increased in 1984 and 1985. However, they declined again in 1986 and are projected to continue declining through 1990.

[3]U.S. Department of Commerce. (1984). *Population Estimates and Projections* (Current Population Reports, Series P-25, No. 917). Washington, DC: U.S. Government Printing Office.

[4]For details on the methodology used in these projections, see U.S. Department of Education. (1985). *Projections of Education Statistics to 1992-93*. Washington, DC: U.S. Government Printing Office.

Table 1:25

Public school enrollment: 1969–86 with projections to 1995

Year (fall)	Total	Grade	
	K-12[1]	K-8[1]	9-12
		(In thousands)	
1969	45,619	32,597	13,022
1970	45,909	32,577	13,332
1971	46,081	32,265	13,816
1972	45,744	31,831	13,913
1973	45,429	31,353	14,077
1974	45,053	30,921	14,132
1975	44,791	30,487	14,304
1976	44,317	30,006	14,311
1977	43,577	29,336	14,240
1978	42,550	28,328	14,223
1979	41,645	27,931	13,714
1980	40,987	27,674	13,313
1981	40,099	27,245	12,855
1982	39,652	27,156	12,496
1983	39,352	26,997	12,355
1984	39,293	26,918	12,375
1985	39,513	27,047	12,467
1986[2]	39,712	27,355	12,357
		Projected	
1987	39,916	27,828	12,088
1988	40,116	28,387	11,729
1989	40,379	28,985	11,394
1990	40,898	29,628	11,270
1991	41,548	30,175	11,373
1992	42,259	30,717	11,542
1993	42,967	31,139	11,828
1994	43,672	31,408	12,264
1995	44,238	31,635	12,603

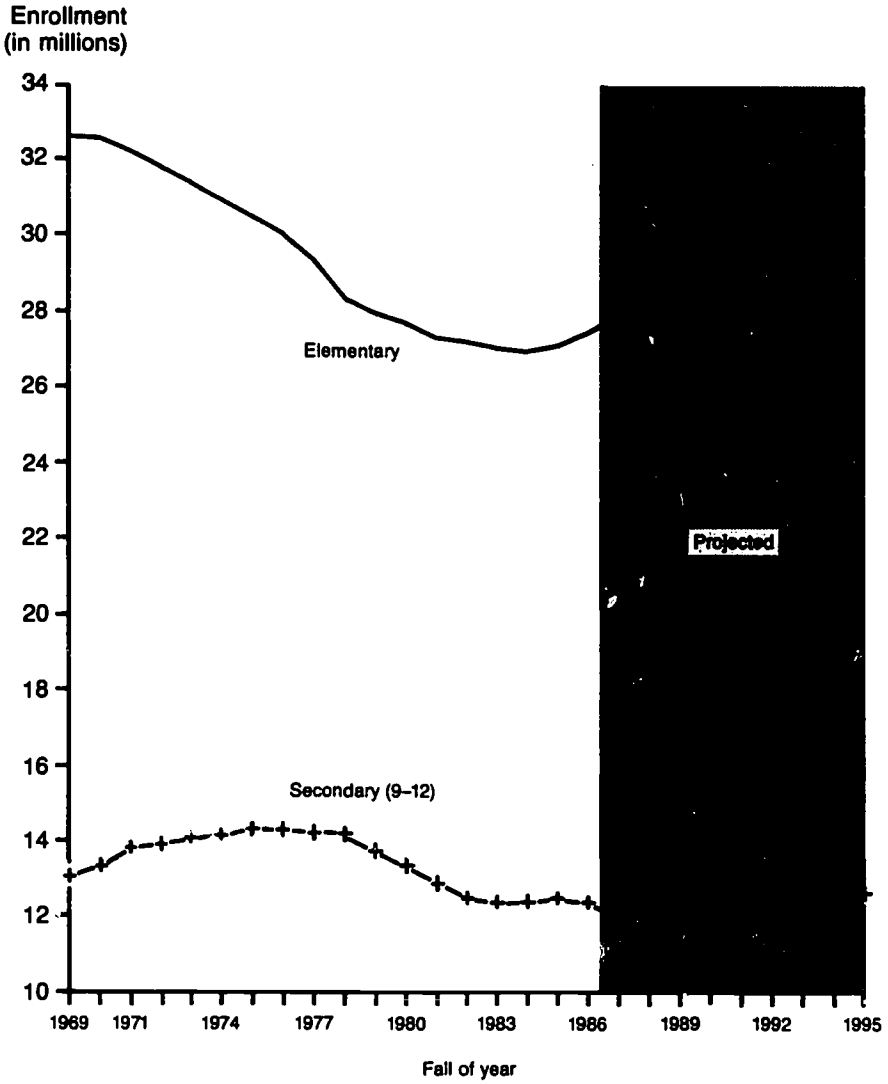
[1] Includes most kindergarten and some nursery school enrollment.

[2] Estimated.

NOTE: Detail may not add to totals because of rounding.

SOURCE: U.S. Department of Education, Center for Education Statistics, *Public and Private Elementary and Secondary Enrollments: Outlook to the Year 2000, 1987.*

CHART 1:25—Public school enrollment: 1969–95



SOURCE: Center for Education Statistics, *Public and Private Elementary and Secondary Enrollments: Outlook to the Year 2000, 1987.*

- Public elementary/secondary enrollment declined during the 1970's and early 1980's.
- Enrollment in public elementary schools began to increase in 1985 and is projected to continue increasing through 1995.
- The number of public secondary school students is expected to begin increasing in 1991 as the new cohort of elementary students moves through the education system.

School enrollment rates, by selected age groups

The proportion of young Americans enrolled in school is not only a measure of school holding power, but also of other complex societal factors. Data presented in the accompanying table display enrollment rates for three age groups: 3- to 4-, 5- to 6-, and 16- to 17-year-olds. For more extensive data on enrollment by grade level see table 1:26-1.

The enrollment of 3- to 4-year-old children has increased markedly in the last 20 years, from 10 percent in 1964 to nearly 39 percent in 1985. Among 5- to 6-year-olds, enrollment increased from about 83 percent in 1964 to over 96 percent in 1985. The greatest increase occurred between 1964 and 1974; since then, the enrollment rate has remained fairly stable.

The increasing participation in the labor force of women with children is seen as a main contributor to these trends. There may be additional explanations, including public enthusiasm for early childhood education, and the growing availability of nursery and kindergarten classes.[1]

The enrollment of 16- to 17-year-old youth has hovered around 90 percent since 1964. In 1964, the enrollment rate for this group was nearly 88 percent, and it increased slightly to almost 92 percent in 1985. The consistently high enrollment rates among 16- to 17-year-olds may reflect both compulsory school attendance laws in many States and the high value placed by this society on obtaining a high school education.[2]

In 1985, of 18- to 19-year-olds:
- 74 percent had completed high school;
- 11 percent were still enrolled in high school;
- 14 percent were not enrolled in school and were not high school graduates.

See Pallas (1986) for further discussion of dropout and graduation rates.[4] Also, Indicator 1:9 treats the issue of dropouts who later complete their schooling.

[1]For further discussion, see Pendleton, A., "Preschool Enrollment: Trends and Implications." *The Condition of Education, 1986 Edition*, U.S. Department of Education.

[2]16- to 17-year-old enrollments include some enrolled in college, but do not include a small number who have already completed high school but are not enrolled in college.

[3]U.S. Department of Commerce, Bureau of the Census, *Current Population Reports*, "Population Characteristics, School Enrollment. Social and Economic Characteristics of Students: October 1984 Advance Report," November 1985.

[4]Pallas, A., "School Dropouts in the United States." *The Condition of Education, 1986 Edition*, U.S. Department of Education.

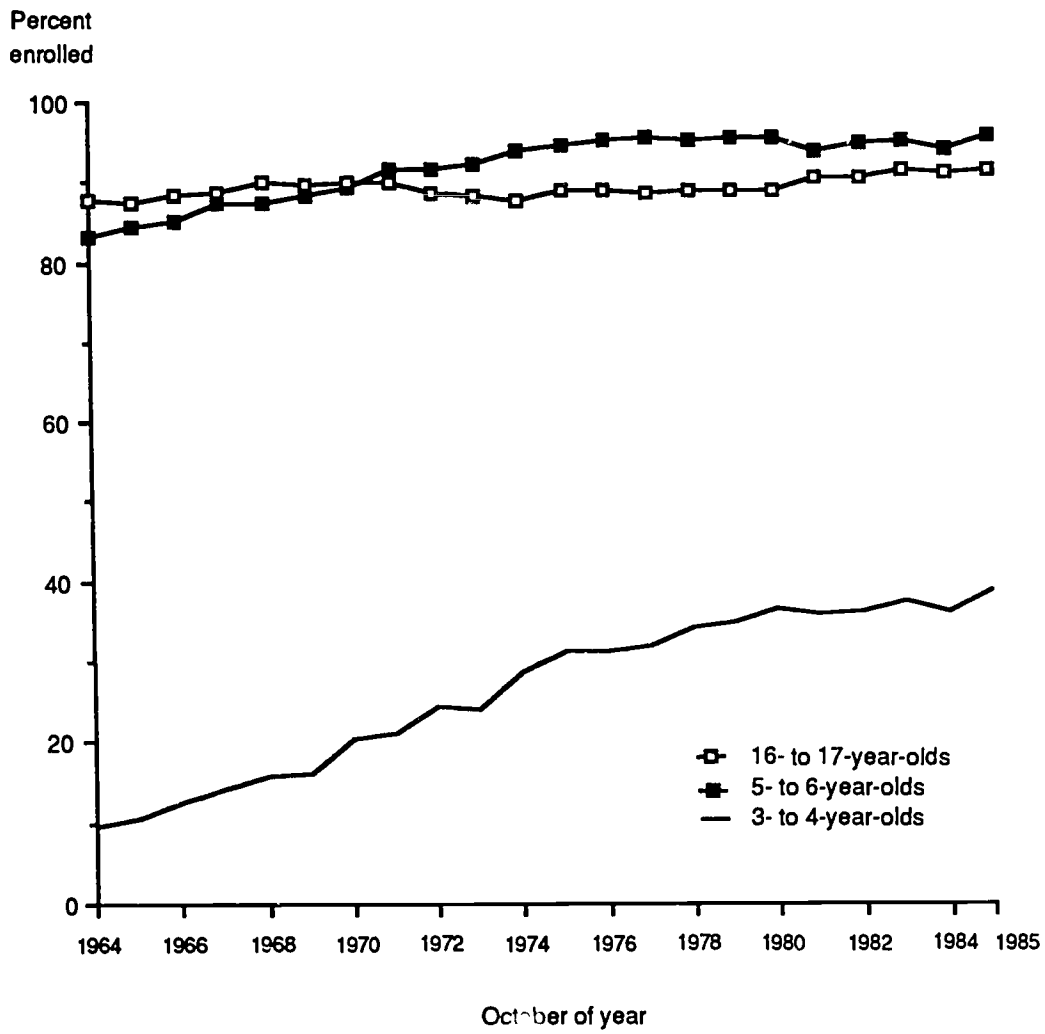
Table 1:26

School enrollment rates by selected age groups: 1964 to 1985

Year	3- to 4-year-olds	5- to 6-year-olds	16- to 17-year-olds	Year	3- to 4-year-olds	5- to 6-year-olds	16- to 17-year-olds
	Percentage of age group				Percentage of age group		
1964	9.5	83.3	87.7	1975	31.5	94.7	89.0
1965	10.6	84.4	87.4	1976	31.3	95.5	89.1
1966	12.5	85.1	88.5	1977	32.0	95.8	88.9
1967	14.2	87.4	88.8	1978	34.2	95.3	89.1
1968	15.7	87.6	90.2	1979	35.1	95.8	89.2
1969	16.1	88.4	89.7	1980	36.7	95.7	89.0
1970	20.5	89.5	90.0	1981	36.0	94.0	90.6
1971	21.2	91.6	90.2	1982	36.4	95.0	90.6
1972	24.4	91.7	88.9	1983	37.5	95.4	91.7
1973	24.2	92.5	88.3	1984	36.3	94.5	91.5
1974	28.8	94.2	87.9	1985	38.9	96.1	91.7

SOURCE: U.S. Department of Commerce Bureau of the Census, Current Population Reports, Series P-20, *School Enrollment—Social and Economic Characteristics of Students*, various years, and special tabulations.

CHART 1:26—School enrollment rates of selected age groups



SOURCE: U.S. Bureau of the Census, Current Population Reports.

- The most significant changes in school enrollment have been among 3- and 4-year-olds. From about 10 percent enrolled in the mid-1960's, the proportion reached nearly 39 percent in 1985.
- About 96 percent of 5- and 6-year-old children are enrolled in school. The greatest increase occurred between 1964 and 1974.
- Enrollment of 16- and 17-year-old youth has been approximately 90 percent for most of the period.

C. Context: Student Characteristics

Racial/ethnic composition of public schools

Between 1976 and 1984, the racial and ethnic composition of the Nation's public schools underwent considerable change. Continuing trends from previous decades, the number of white students declined, while the number and proportion of minority students increased. This increase can be explained partly by demographic shifts: the substantial immigration of Hispanic and Asian students, and the relatively high birth rates of some minority groups compared with whites. The number of Asian students increased by over 85 percent, and the number of Hispanic students increased by 28 percent. On the other hand, the number of black students declined by nearly 6 percent.

Although minority students are enrolled in public school districts of all sizes, smaller districts have lower proportions of minority students, while larger districts have higher proportions. There are a number of ways to illustrate this phenomenon. For example, in the table below, enrollments in all schools are contrasted with enrollments in the 20 largest school districts. In all school districts, the proportion of white and minority students was about 71 percent and 29 percent, respectively, in 1984. For the 20 largest school districts, the proportions were essentially reversed, with enrollments of 30 percent white and 70 percent minority students.

This information may also be described in terms of ratios. To illustrate, in 1984, the 20 largest districts enrolled about 1 out of every 20 white students in the Nation, but 1 out of every 4 minority students. Detailed information on enrollment by race/ethnicity for each of the 20 largest school districts may be found in appendix table 1:27-1.

Between 1976 and 1984, the proportion of minority students increased in the 20 largest districts more than in the Nation as a whole (10 percentage points vs. 5 percentage points). This was due primarily to the substantial decline in the number of white students (–34 percent) rather than growth in the number of minority students (+2 percent).

In 1984, over one-half of the Nation's 16,000 school districts had fewer than 1,200 students (see appendix table 1:27-2); these smaller districts contained about 10 percent of all students, but less than 4 percent of minority students. By contrast, the 79 largest districts, each enrolling 40,000 or more students, enrolled about 20 percent of all students but about 42 percent of all minority students.

Appendix table 1:27-3 displays public school enrollment by race/ethnicity for each State.

Table 1:27

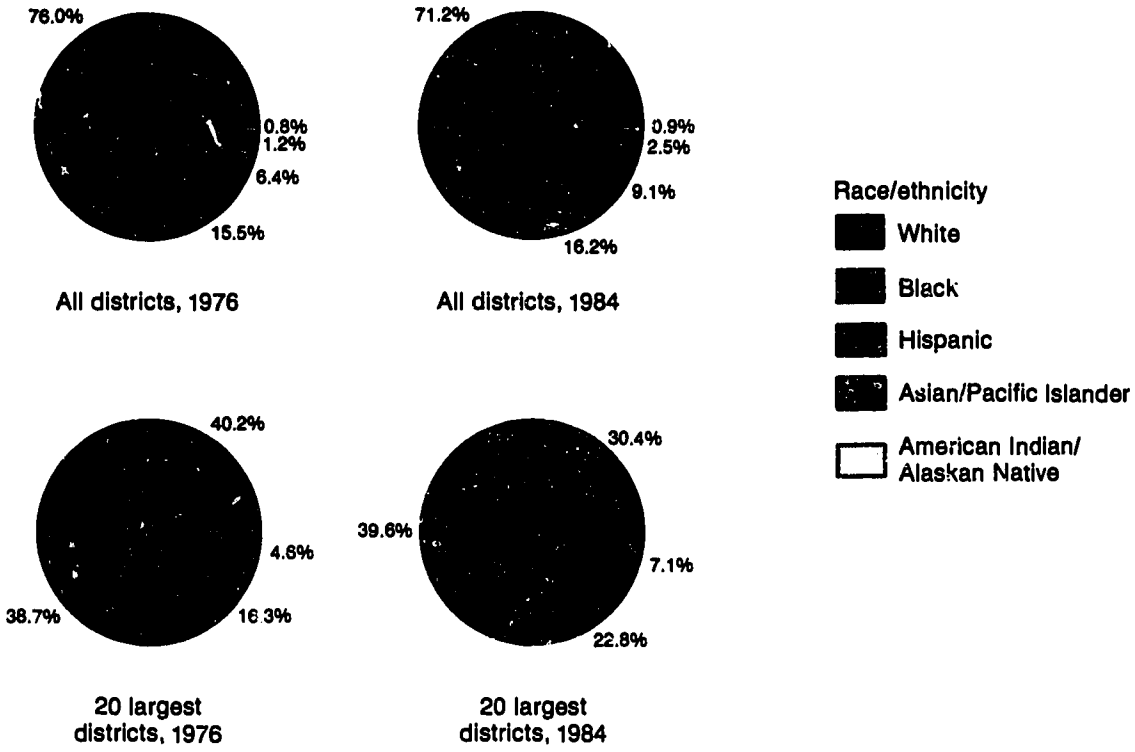
Enrollment in all public school districts and in the 20 largest districts, by race/ethnicity: 1976 and 1984

Race/ethnicity	All school districts			20 largest school districts		
	1976	1984	Change, 1976–84	1976	1984	Change, 1976–84
	Number (in thousands)					
Total	43,714	39,452	-4,262	4,820	4,222	-598
White, non-Hispanic	33,229	28,106	-5,123	1,938	1,282	-655
Total minority	10,485	11,346	861	2,882	2,939	57
Black, non-Hispanic	6,774	6,389	-385	1,866	1,672	-194
Hispanic	2,807	3,599	791	784	962	178
Asian/Pacific Islander	535	994	459	220	298	78
American Indian/Alaskan Native	368	364	-4	11	7	-4
	Percent					
Total	100.0	100.0	-9.7	100.0	100.0	-12.4
White, non-Hispanic	76.0	71.2	-15.4	40.2	30.4	-33.8
Total minority	24.0	28.8	8.2	59.8	69.6	2.0
Black, non-Hispanic	15.5	16.2	-5.7	38.7	39.6	-10.4
Hispanic	6.4	9.1	28.2	16.3	22.8	22.7
Asian/Pacific Islander	1.2	2.5	85.8	4.6	7.1	35.2
American Indian/Alaskan Native	.8	.9	-1.1	.2	.2	-39.1

NOTE: Data for 1976 are from a census of all school districts. Data for 1984 are estimates of national prekindergarten–12th grade enrollment based on a sample of approximately 3,500 districts surveyed by the Office for Civil Rights. Enrollment figures may differ from others in this report due to differences in methodology. For details on the methodology used by the Office for Civil Rights, see appendix A.

SOURCE: U.S. Department of Education, Office for Civil Rights, *Directory of Elementary and Secondary School Districts and Schools in Selected Districts: 1976–77*; and 1984 Elementary and Secondary School Civil Rights Survey, unpublished tabulations.

CHART 1:27—Enrollment in all public school districts and 20 largest districts, by race/ethnicity: 1976 and 1984



SOURCE: Office for Civil Rights.

- The percentage of public school students who were minorities rose between 1976 and 1984.
- In the 20 largest public school districts, the percentage of minorities was far higher than in the Nation as a whole. The 20 largest public school districts were composed predominantly of minority students.

Students in selected public school special education programs, by race and ethnicity

Legislation passed in the 1970's, culminating in the Education for All Handicapped Children Act (P.L. 94-142), required that public schools provide educational services for handicapped students. According to information the States reported to the U.S. Department of Education, the number of handicapped students receiving special education under the Federal law rose from 9.1 percent of all students in 1978 (the first year in which the law was fully implemented) to 11 percent in 1984. The reasons for the rise are specific to each handicapping condition,[1] and growth did not characterize all categories. (See appendix table 1:28-1 for enrollments for all major handicapping conditions identified under the provisions of P.L. 94-142.)

This indicator uses data collected by the Office for Civil Rights to examine changes from kindergarten through 12th grade in several of these Federally mandated and supported special education programs, plus State and local programs for the gifted.[2] It also shows the disproportionate representation of some racial/ethnic groups in some programs.

The greatest increase between 1978 and 1984 occurred in gifted and talented classes, where the proportion enrolled more than doubled. In both years, the proportion of Asian and Pacific Islanders in these programs was about twice the average for all students. The proportion of white students in these classes was also very high. The percentage of specific learning disabled students nearly doubled from 2.3 percent to 4.2 percent. The proportion of the white, black, and Hispanic students identified as learning disabled all rose by more than 70 percent. These figures should be interpreted with caution. Some students who may need help but who are not handicapped are sometimes misclassified and placed in programs for learning disabled students in order to get them the help they need. Others may be labeled learning disabled because they present behavior problems that confound the classroom teacher.[4] The rise in learning disabled enrollments has been accompanied by decreases in some other categories.

The final increase in the categories shown in this indicator was in the proportion of students enrolled in classes for the seriously emotionally disturbed—up from 0.3 percent to 0.6 percent of the student population. Among the possible explanations for this rise: schools have an increased capacity to serve a wider range of children with emotional problems; other agencies have reduced their services for children; negative environmental conditions, such as child abuse and neglect, have increased; and family structure and societal values have changed, contributing to greater pressures on children and youth.[5]

[1]U.S. Department of Education, Office of Special Education and Rehabilitative Services (OSERS). *Eighth Annual Report to Congress on the Implementation of Public Law 94-142* (1986), pp. 5-8.

[2]Gifted and talented students are not served under P.L. 94-142 and therefore are not included in the estimates of children being served under the law. However, for purposes of racial/ethnic and sex analyses, the Office for Civil Rights includes the gifted and talented in their survey under a separate pupil statistics category, Pupils in Programs for the Gifted and Talented.

[3]U.S. Department of Education, *Educating Students with Learning Problems: A Shared Responsibility*, (Washington, D.C., 1986). p. 7.

[4]U.S. Department of Education, *First Lessons: A Report on Elementary Education in America*, (Washington, D.C.: Government Printing Office, 1986), p. 60.

[5]OSERS. *Eighth Annual Report to Congress*, p. 7.

Table 1:28— Participation of public elementary and secondary school students in selected special education programs, by race/ethnicity: 1978 and 1984

Type of program	Participants as percent of specific racial/ethnic group					
	Total*	White	Black	Hispanic	Asian/Pacific Islander	American Indian/ Alaskan Native
Specific learning disabled						
1978	2.3	2.3	2.2	2.6	1.3	3.5
1984	4.2	4.2	4.5	4.5	1.6	5.2
Educable mentally retarded						
1978	1.4	1.1	3.4	1.0	.4	1.7
1984	1.3	1.0	3.1	1.2	.3	1.4
Trainable mentally retarded						
1978	.2	.2	.4	.2	.2	.2
1984	.2	.2	.4	.3	.2	.3
Seriously emotionally disturbed						
1978	.3	.3	.5	.3	.1	.3
1984	.6	.6	.8	.4	.1	.5
Speech impaired						
1978	2.0	2.0	1.9	1.8	1.8	1.8
1984	2.5	2.7	2.4	2.0	1.7	2.5
Gifted and talented						
1978	1.9	2.1	1.3	1.5	4.6	.8
1984	4.2	4.7	2.2	2.1	8.3	2.0

*The percentages of total enrollment are based on enrollment in U.S. public schools, kindergarten through 12th grade.

SOURCE: U.S. Department of Education, Office for Civil Rights, Elementary and Secondary School Civil Rights Survey, 1978 and 1984, unpublished tabulations.

CHART 1:28A—Percent of students in classes for the specific learning disabled, by race/ethnicity: 1978 and 1984

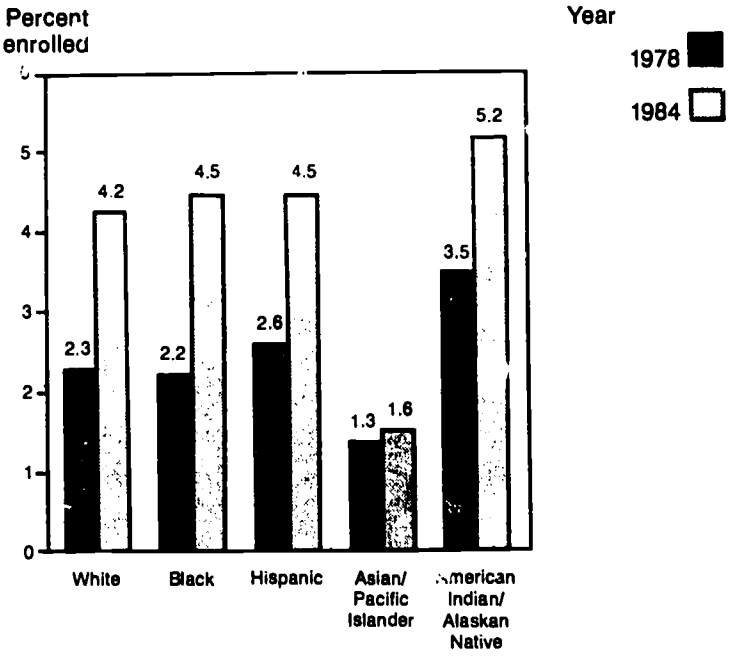
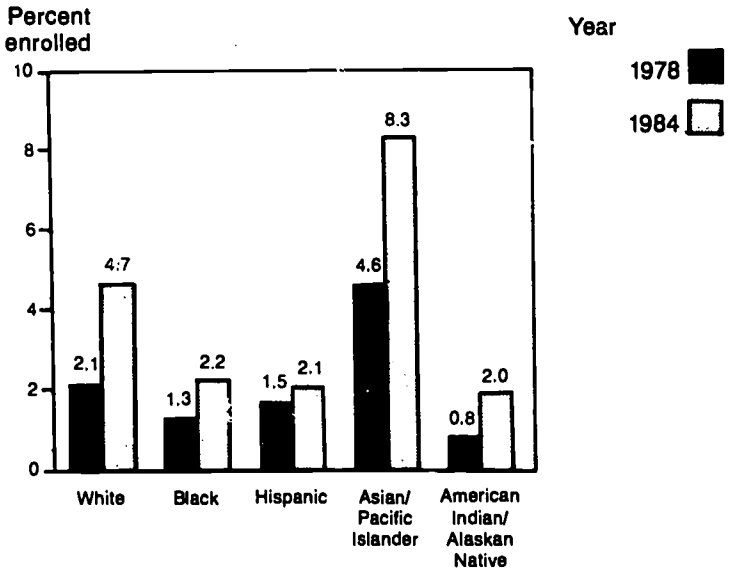


CHART 1:28B—Percent of students in classes for the gifted and talented, by race/ethnicity: 1978 and 1984



SOURCE: Office for Civil Rights, Elementary and Secondary School Civil Rights Survey, 1978 and 1984, unpublished tabulations.

- The proportion of students enrolled in classes for students with specific learning disabilities increased markedly between 1978 and 1984 for most racial/ethnic groups.
- The proportion of Asian and Pacific Islander students in classes for the gifted and talented was higher than for other groups and rose 80 percent between 1978 and 1984.

Aspects of the home environment and reading performance

In addition to assessing students' reading achievement, the National Assessment of Educational Progress (NAEP) asks students a range of background questions. Although the associations between the background variables and reading proficiency do not establish cause and effect, they may provide insights into the importance of specific features of the environment in the learning process.

One feature of the home environment relevant to student reading performance is the amount of reading material, such as books, newspapers, magazines, and encyclopedias, in the home. At all three ages in the NAEP measure (9, 13 and 17), children from homes with an abundance of reading material had substantially higher average reading proficiency levels than children with few such materials available.

Television is frequently cited as an influence that diverts children's attention from reading and school work, and this is corroborated by the NAEP data. Students who watch up to 2 hours of television per day, without regard to the availability of reading materials in the home, have reading proficiency levels above average for their age group. But 6 or more hours per day spent watching television is related to lower reading proficiency for all three age groups. Television viewing may not lower reading proficiency—poor readers may simply choose to watch more television.

However, NAEP reported an increase between 1979–80 and 1983–84 in the proportion of children who watch a great deal of television, particularly at age 9, and a decrease in the availability of reading material in their homes. Further analysis of the data from the 1983–84 reading assessment revealed that time spent watching television was negatively correlated with the availability of reading materials in the home for students at all three ages. NAEP speculated that this may reflect a national trend toward less use of printed material and more reliance on other media, especially television, to obtain information or occupy leisure time.* See appendix table 1:29-1 for details on reading proficiency by the amount of reading material available in the home and by time spent watching television.

Combining the availability of reading materials in the home and the amount of time spent watching television into one indicator of the home environment underscores the association with reading proficiency at all three age levels. The average reading proficiency of students who came from homes with few reading materials and watched more than 6 hours of television per day is much lower than the mean reading proficiency of students who have many reading materials available at home and who watch 2 hours or less of television per day.

*National Assessment of Educational Progress, *The Reading Report Card, Progress Toward Excellence in Our Schools* (Report No. 15-R-01), 1985.

Table 1:29

Average reading proficiency of 9-, 13-, and 17-year-old students, by amount of reading materials in the home and television viewing time: 1984

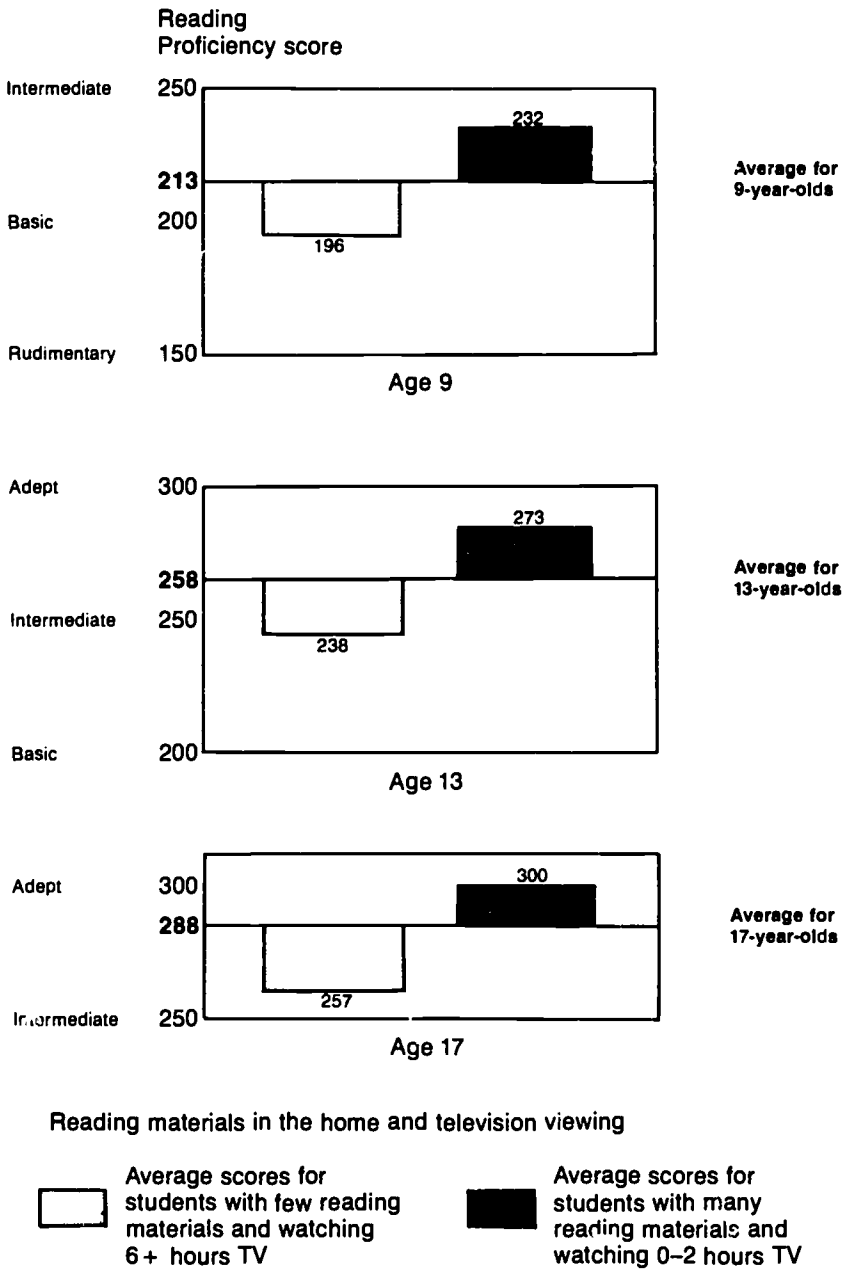
Age and hours of television viewed per day	Overall	Reading materials in the home*	
		Few	Many
	Average reading proficiency scale scores		
9-year-olds	213	—	—
0-2 hours	—	206	232
6+ hours	—	196	210
13-year-olds	258	—	—
0-2 hours	—	247	273
6+ hours	—	238	253
17-year-olds	288	—	—
0-2 hours	—	273	300
6+ hours	—	257	277

—Not applicable.

*Students were asked: (a) Does your family get a newspaper regularly? (b) Is there an encyclopedia in your home? (c) Are there more than 25 books in your home? (d) Does your family get any magazines regularly? Four "yes" responses were combined as *many* on the reading materials index and two or less "yes" responses as *few*.

SOURCE: National Assessment of Educational Progress, 1983–84 Assessment of Reading (Special tabulations, 1986).

CHART 1:29—Correlates of reading proficiency: 1984



SOURCE: National Assessment of Educational Progress, 1983–84 Assessment of Reading, special tabulations, 1986.

- At each age tested, students from homes with many reading materials who watched little television exceeded the average score for their age. They also read much better than students from homes with few reading materials who watched a great deal of television.

C. Context: Learning Environment

Disruptive behavior in public schools

Ideally, schools are places where teachers and students pursue education in a trouble-free, supportive environment. Unfortunately school campuses are often subject to various types of disruptive behavior by students. Indeed, in recent years, violence, crime, and general misbehavior on school grounds have received much national attention both in and apart from the current educational reform movement. The general public sees lack of discipline as the greatest problem in the schools. (See Indicator 1:35.)

Data from the U.S. Department of Education's 1985 Fast Response Survey System (FRSS) sample survey of public junior and senior high school principals address numerous aspects of student discipline and student behavior. The table below displays three types of student infractions: students caught selling illegal drugs at school, student reports of theft of personal items over $10 value, and law violations reported to police by school authorities.

Urban schools and large schools were more likely to have student infractions than rural schools and small schools. Reports of students selling drugs showed the largest differences among schools. Proportionately more senior high than junior high schools experienced drug selling on campus, but the difference was smaller than differences by size and metropolitan status.

Principals were also asked about factors that limited their ability to maintain order in the school. Of a list of five factors, only the lack of alternative placements or programs for disruptive students was seen as a serious limitation to the school's ability to maintain order: 36 percent of principals indicated that this lack limited them greatly.

Note: For additional discussion, see U.S. Department of Health, Education, and Welfare, National Institute of Education, *Violent Schools—Safe Schools, The Safe Schools Study Report to the Congress*, Washington, DC, 1978.

Table 1:30

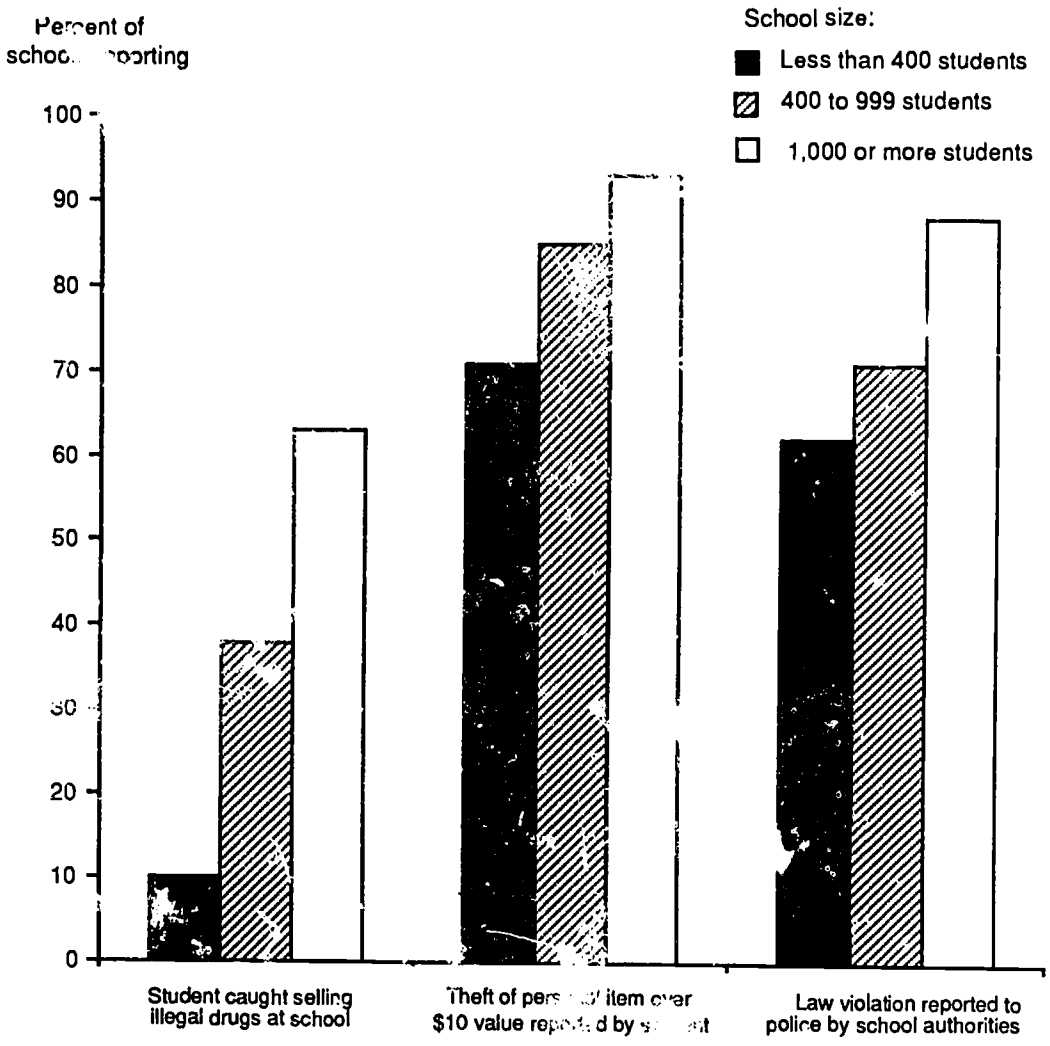
Incidence of selected student infractions in public secondary schools by selected school characteristics: 1983–84

School characteristic	Student caught selling illegal drugs at school		Theft of personal item over $10 value reported by student		Law violations reported to police by school authorities	
	Percentage of schools	Incidence per 100 students[1]	Percentage of schools	Incidence per 100 students[1]	Percentage of schools	Incidence per 100 students[1]
Total	35	.2	82	1.2	72	.8
Grade level[2]						
Junior high	31	.2	80	.8	70	.7
Senior high	39	.2	84	1.4	75	.8
School size						
Less than 400	10	.2	71	1.7	62	1.0
400–999	38	.2	85	.9	71	.7
1000 or more	63	.2	93	1.1	88	.9
Metropolitan status						
Rural	21	.1	79	1.4	64	.7
Suburban	46	.2	84	1.0	76	.8
Urban	51	.5	89	1.3	88	1.5

[1]Based on all schools including those that reported no occurrences.
[2]Some schools have both elementary and secondary grades. These schools are not listed separately because their number is small; they are included in the total and in analyses with other school characteristics.

SOURCE: U.S. Department of Education, Center for Statistics, Fast Response Survey System, "School Discipline Policies and Practices." OERI Bulletin, 1986.

CHART 1:30—Student infractions in public secondary schools: 1984



SOURCE: Center for Education Statistics, Survey of School Discipline Policies and Practices.

- More than one-third of public junior and senior high school principals reported that at least one student was caught selling illegal drugs at school during the 1983–84 school year. Large schools were six times as likely to have caught students selling drugs than small schools (33 and 10 percent respectively).
- The majority of public junior and senior high school principals, in schools of all sizes, reported that there had been thefts of personal items reported by students and law violations reported to the police by school authorities.

Student drug and alcohol abuse

Drug and alcohol abuse by American students is an important education concern, because it is so widespread and has health- and life- threatening consequences. An annual survey by the National Institute on Drug Abuse, begun in 1975, asks high school seniors to identify how much they use various legal and illegal substances. It shows that a student's acquaintance with such substances generally begins in adolescence and, increasingly, at even younger ages. For many substances, usage continues and increases into adulthood.

Learning is a thinking process, and drugs—whether sedatives, hallucinogens or stimulants—interfere with thinking and reduce academic achievement. In terms of environment, neighborhoods near schools often are magnets for drug dealers, who can be students themselves. Crimes of violence and casualties may accompany or result from substance abuse. In these circumstances, school effectiveness and student achievement, not limited only to the abusers, can suffer. Nationally, millions of dollars are spent to combat drug abuse and related crimes and to rehabilitate individuals who have become chemically dependent.

Overall, there has been a downward trend in alcohol and illicit drug use in the 1980's. Nevertheless, it remains prevalent on a large scale. For example, by the time they are high school seniors, nearly 6 out of 10 students have tried an illicit substance. Because of the dramatic rise in its usage in the last decade, data on cocaine are highlighted below.

Table 1:31

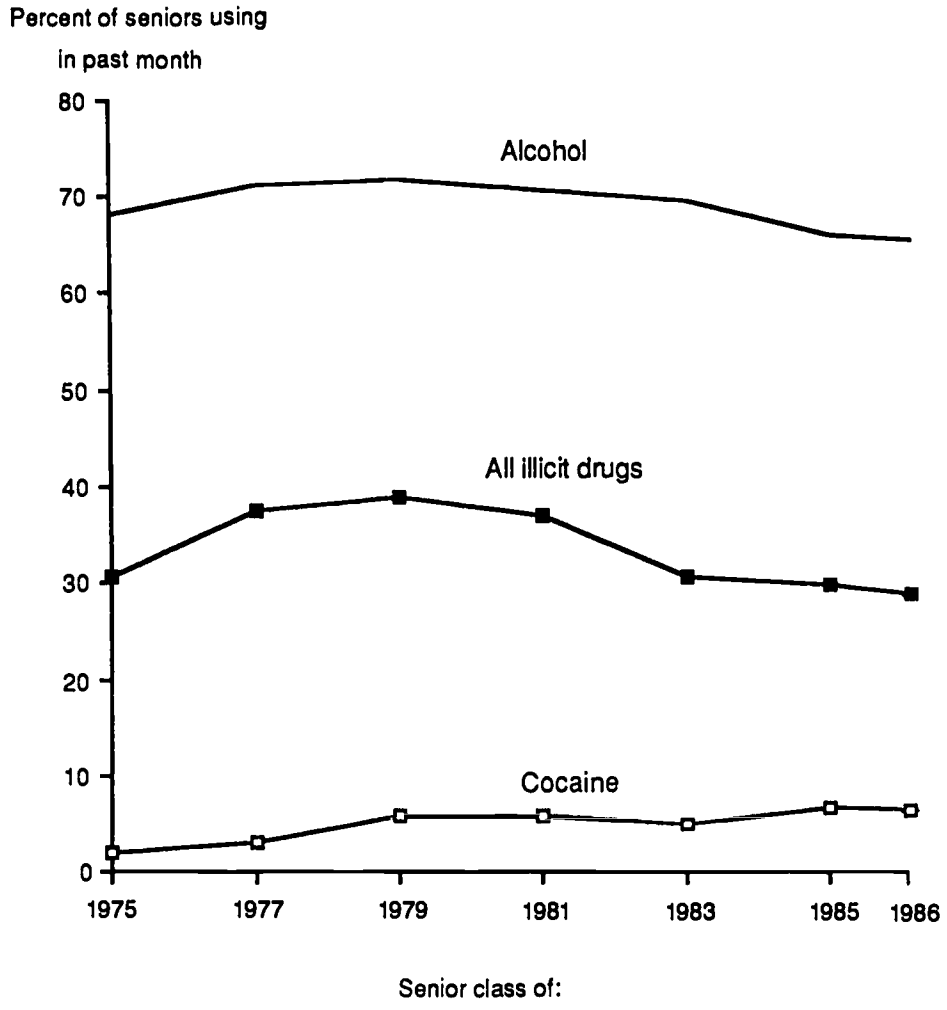
Trends in the use of drugs and alcohol by high school seniors: Selected years, 1975-86

Substance used	Class of: 1975	1977	1979	1981	1983	1985	1986
	Percent ever used						
All illicit drugs*	55.2	61.6	65.1	65.6	62.9	60.6	57.6
Cocaine	9.0	10.8	15.4	16.5	16.2	17.3	16.9
Alcohol	90.4	92.5	93.0	92.6	92.6	92.2	91.3
	Percent who used in the last 12 months						
All illicit drugs*	45.0	51.1	54.2	52.1	47.4	46.3	44.3
Cocaine	5.6	7.2	12.0	12.4	11.4	13.1	12.7
Alcohol	84.8	87.0	88.1	87.0	87.3	85.6	84.5
	Percent who used in the last 30 days						
All illicit drugs*	30.7	37.6	39.0	36.9	30.5	29.7	27.1
Cocaine	1.9	2.9	5.7	5.8	4.9	6.7	6.2
Alcohol	68.2	71.2	71.8	70.7	69.4	65.9	65.3

*Includes marijuana, hallucinogens, cocaine, and heroin, other opiates, stimulants, sedatives, or tranquilizers not under a doctor's orders. About 75 percent of these users reported smoking marijuana.

SOURCE: Johnston, L D., O'Malley, P.M., and Bachman, J.G., *Drug Use Among American High School Students, College Students, and Other Young Adults*, U.S. Department of Health and Human Services, Alcohol, Drug Abuse and Mental Health Administration, National Institute on Drug Abuse (#86-1450),1986, and personal communication. See also, U.S. Department of Education, *Schools Without Drugs*, 1986.

CHART 1:31—Trends in the use of selected licit and illicit substances by high school seniors



SOURCE: National Institute on Drug Abuse, *Drug Use Among American High School Students, College Students, and Other Young Adults*, 1986.

- The rate of cocaine use among high school seniors has more than tripled since 1975. In 1986, one out of every 16 high school seniors reported using cocaine in the month preceding the survey.
- While alcohol usage has declined slightly over the decade, rates remain high. In 1986, nearly 2 in every 3 seniors reported using alcohol in the month preceding the survey.

School climate in public and Catholic high schools

The effective schools research literature suggests that schools with positive school climates are more effective at promoting the academic success of their students. Most research on school climate and effective schools has focused on elementary schools. This indicator applies the effective schools model to American high schools.

While the details of what constitutes a positive school climate vary from one study to the next, there is some agreement. Some of the components of climate frequently identified in effective schools research are strong principal leadership; a safe, orderly environment with a minimum of classroom disruption; high teacher morale; collegiality and cooperation among staff members; and teacher control over school and classroom policy.

The data below show differences among public and Catholic high school teachers in their reports of school climate along the climate components noted above. A majority of the teachers in both public and Catholic high schools report positively on most aspects of climate in their schools. Catholic high school teachers, however, are considerably more likely to report a positive school climate than are public high school teachers for each of the reported dimensions.

On average, students in the Catholic high schools surveyed are stronger academically to begin with than their public school peers and are likely to come from more advantaged backgrounds.[1] These differences seem to foster some of the climate differences between public and Catholic high schools. The presence of academically talented and highly motivated students in the school may facilitate the development of effective learning environments. The remaining public-Catholic differences in school climate, however, cannot be attributed to the student mix, and may be due to public-Catholic differences in school functioning. One potentially important difference is that Catholic high school principals report greater control over policy and personnel than do public high school principals.[2]

Details on how the school climate components were derived and analyzed may be found in technical note 1:32, appendix A.

Table 1:32

School climate in public and Catholic high schools: 1984

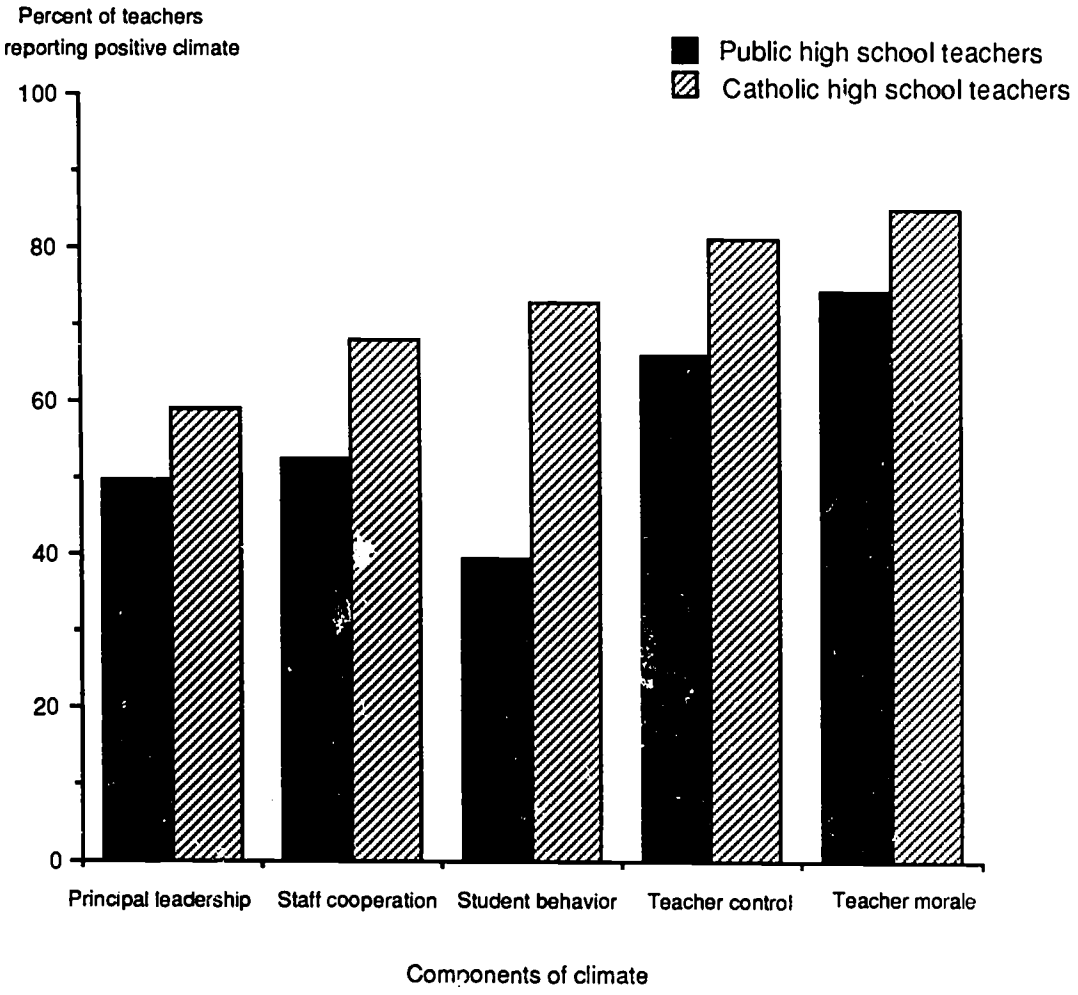
Components of climate	Teachers reporting positive school climate	
	Public Schools	Catholic schools
	Percent	
Principal leadership	49.8	59.1
Staff cooperation	52.4	67.9
Student behavior	39.4	72.9
Teacher control over school and classroom policy	65.9	81.1
Teacher morale	74.1	84.4

SOURCE: National Institute of Education, Consortium for the Study of Effective Schools, High School and Beyond Administrator and Teacher Survey, 1984.

[1]Pallas, A.M., "School Climate in American High Schools." U.S. Department of Education, Center for Statistics, unpublished paper, 1986. See also Coleman, James S., and Hoffer, Thomas, *Public and Private High Schools: The Impact of Community*, New York City, 1987.

[2]Chubb, J.E., and Moe, T.M., "Politics, Markets, and the Organization of Schools." Paper presented at the Annual Meeting of the American Political Science Association, New Orleans, August 28-September 1, 1985.

CHART 1:32—School climate in public and Catholic high schools: 1984



SOURCE: High School and Beyond Administrator and Teacher Survey, Center for Education Statistics analysis.

- Catholic high school teachers report higher levels of principal leadership, staff cooperation, student behavior, control over school policy and morale than do public high school teachers.
- Of all the components of school climate, public high school teachers give student behavior the lowest rating. Catholic high school teachers report fewer problems with student behavior than do public high school teachers.
- On average, morale is quite high among public and Catholic high school teachers.

Public school teachers' job satisfaction

The core of any school is the teaching staff. Without a well-qualified and motivated teaching staff, no school can hope to reach for excellence. A number of recent surveys and studies on teacher job satisfaction has revealed conflicting views. The Metropolitan Life Survey of the American Teacher, conducted in June 1986, found that 81 percent of public school teachers were somewhat satisfied or very satisfied with teaching as a career, while 19 percent expressed some degree of dissatisfaction.

At the same time, the percentage of American teachers who have at some time seriously considered leaving teaching to go into another occupation increased from 51 percent in 1985 to 55 percent in 1986. The percentage who were very satisfied with teaching decreased from 40 percent in 1984 to 33 percent in 1986. However, the rate at which teachers actually leave their jobs is consistent with the rates of other professional and technical workers.[2]

[1]See "How Teachers Grade Our Schools," *Parade*, December 1, 1985; National Education Association, *Status of the American Public School Teacher*, December 1981 and 1986; and *Nationwide Teacher Opinion Poll*, 1981, 1982, and 1983, copyrighted; and Feistritzer, C.E., *Profile of Teachers in the U.S.*, National Center for Education Information, 1986.

[2]U.S. Department of Education, Center for Statistics, "Teacher Job Entry, Separation, and Transfer Rates," *OERI Bulletin*, 1986.

Table 1:33

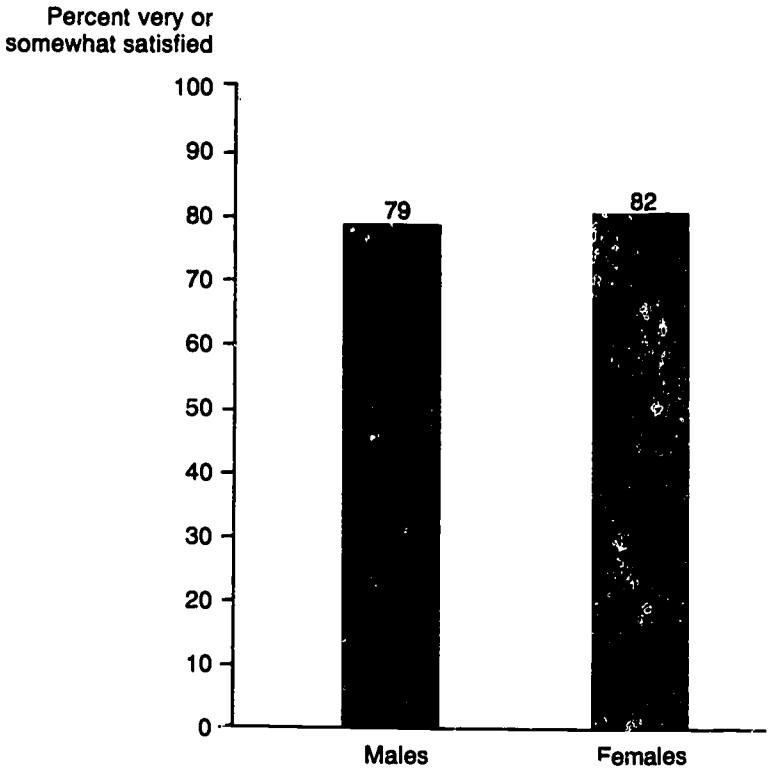
Job satisfaction of public school teachers: 1984–86

Item	Teachers in 1984	Teachers in 1985	Teachers in 1986		
			Total	Male	Female
Ever seriously considered leaving					
Yes	—	51	55	66	50
No	—	49	45	34	50
Likely to leave within next 5 years					
Very likely	—	12	13	14	12
Fairly likely	—	14	14	16	13
Not too likely	—	26	30	31	30
Not at all likely	—	47	42	37	45
Likely to leave within next 2 years					
Very likely	—	—	7	9	6
Fairly likely	—	—	7	10	6
Not too likely	—	-	8	8	8
Not at all likely	—	—	5	4	5
Job satisfaction					
Very satisfied	40	—	33	29	35
Somewhat satisfied	41	—	48	50	47
Somewhat dissatisfied	16	—	15	17	15
Very dissatisfied	2	—	4	5	3

— Not available

SOURCE: Metropolitan Life Insurance Company and Louis Harris and Associates, *The American Teacher, 1986.*

CHART 1:33—Public school teachers' satisfaction with teaching as a job: 1986



SOURCE: Metropolitan Life Insurance Company and Louis Harris, *The American Teacher, 1986.*

- In 1986, males and females were about equally satisfied with their jobs as teachers.

Goals of education as seen by public school teachers and the general public

Consensus on goals is important in an educational system dependent on public support. The Gallup Poll in 1984 asked teachers and the general public to rate the importance of certain education goals on a scale of zero to 10. The results indicate that while teachers and the public generally agree on broad purposes, they do not concur in certain areas.

As table 1:34 shows, the public's top goals were communicating and developing standards of "right and wrong." Teachers ranked four goals about equally high: thinking skills, work habits, communication, and the ability to apply mathematics.

But the public disagreed with teachers in several goal areas. One of these concerns vocational goals, "to develop an understanding about different jobs and careers including their requirements and rewards," and "to help students get good/high-paying jobs." Much of the public found these goals equally important with other, more academically oriented goals, such as developing the ability to write, speak, think, etc. Teachers, however, thought that developing writing and thinking skills was more important than vocational goals.

Another area where there was disagreement between teachers and the general public was in the goal "to develop standards of right and wrong." While only a third of all teachers gave this goal the highest rating, nearly two-thirds of the general public did so.

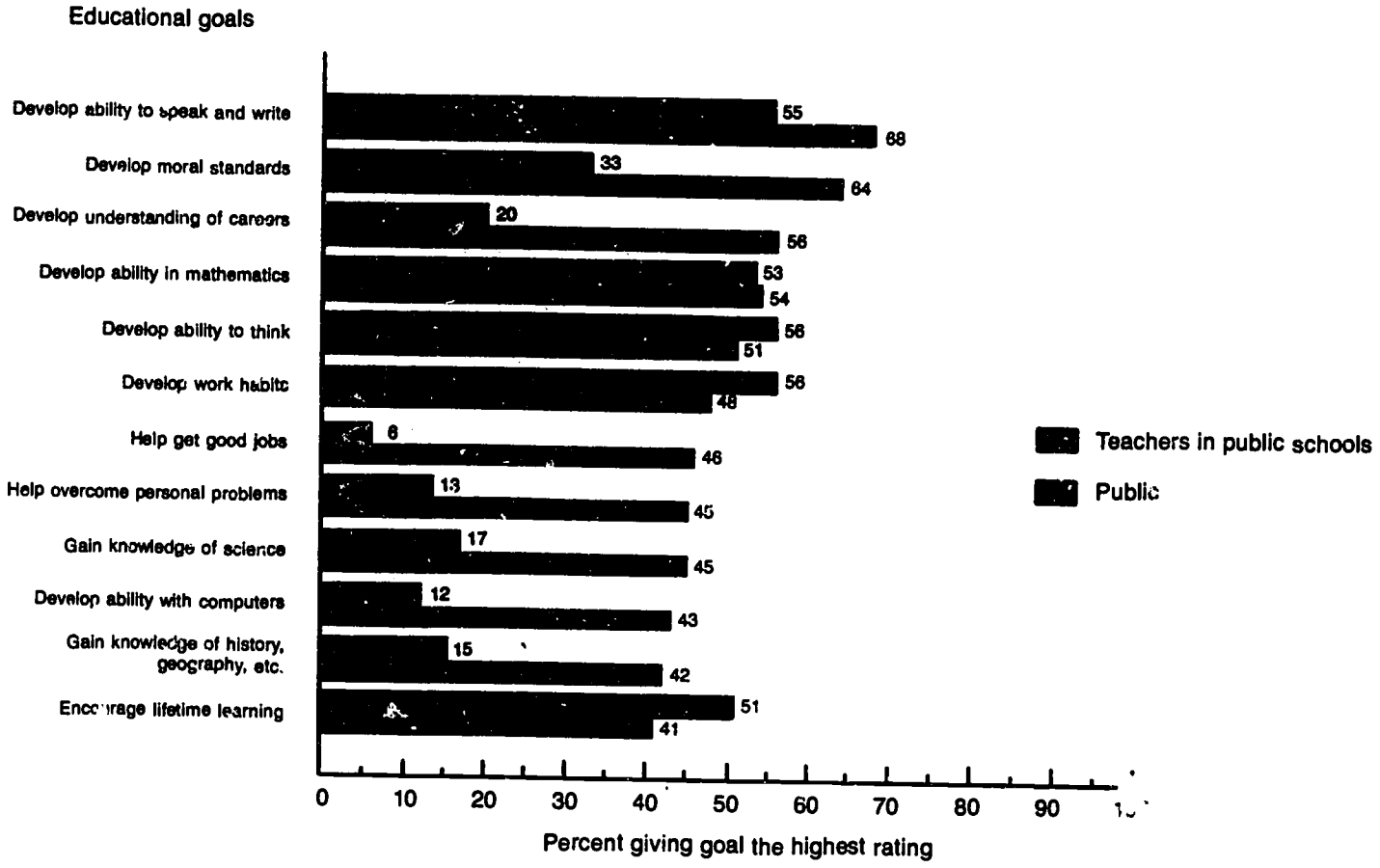
Table 1:34

The importance of selected education goals as seen by public school teachers and the general public: 1984

Goal	U.S. public	Teachers
	Percentage giving highest rating	
To develop the ability to speak and write correctly	68	55
To develop standards of what is "right and wrong"	64	33
To develop an understanding about different kinds of jobs and careers, including their requirements and rewards	56	20
To develop the ability to use mathematics for everyday problems	54	53
To develop the ability to think creatively, objectively, analytically	51	56
To help develop good work habits, the ability to organize one's thoughts, the ability to concentrate	48	56
To help students get good/high-paying jobs	46	6
To help students overcome personal problems	45	13
To gain knowledge and understanding of science and scientific facts	45	17
To develop the ability to understand and use computers	43	12
To gain knowledge of the important facts of history, geography, etc.	42	15
To encourage the desire to continue learning throughout one's life	41	51

SOURCE: *Phi Delta Kappan*, The Gallup Poll of Teachers' Attitudes Toward the Public Schools, Part 2, January 1985.

CHART 1:34—Perceived importance of selected educational goals: 1984



SOURCE: *Phi Delta Kappan*, The Gallup Poll of Teachers' Attitudes Toward the Public Schools.

- The highest rated goal of the general public is "to develop the ability to speak and write correctly."
- The public rates as highly important two vocational goals to which public school teachers assign low priority—"help get good jobs" and "develop understanding of careers."
- Nearly two-thirds of the public (64 percent) said developing standards of right and wrong was important. Only half as many public school teachers gave this goal the highest rating.

School problems as seen by public school teachers and the general public

Polls of the opinions of teachers and the general public alert decisionmakers to probable reactions to a variety of school programs and policies. However, *The Gallup Poll of Teachers' Attitudes Toward the Public Schools* found that the attitudes of teachers and the public are frequently at odds. The question asked of both groups in 1984 was, "What do you think are the biggest problems with which the public schools in this community must deal?"

The results indicate that the problem most cited by teachers, "parents' lack of interest," was one of the problems least cited by the public. On the other hand, 3.5 times as many members of the public as teachers thought that "difficulty getting good teachers" was a major problem. Also, the public sees the use of drugs as a major problem in the public schools whereas teachers generally do not.

There was general agreement between teachers and the public in two areas. They both cited "lack of proper financial support" and "lack of discipline" as major problems. But even here there were significant differences in the two groups.

Table 1:35

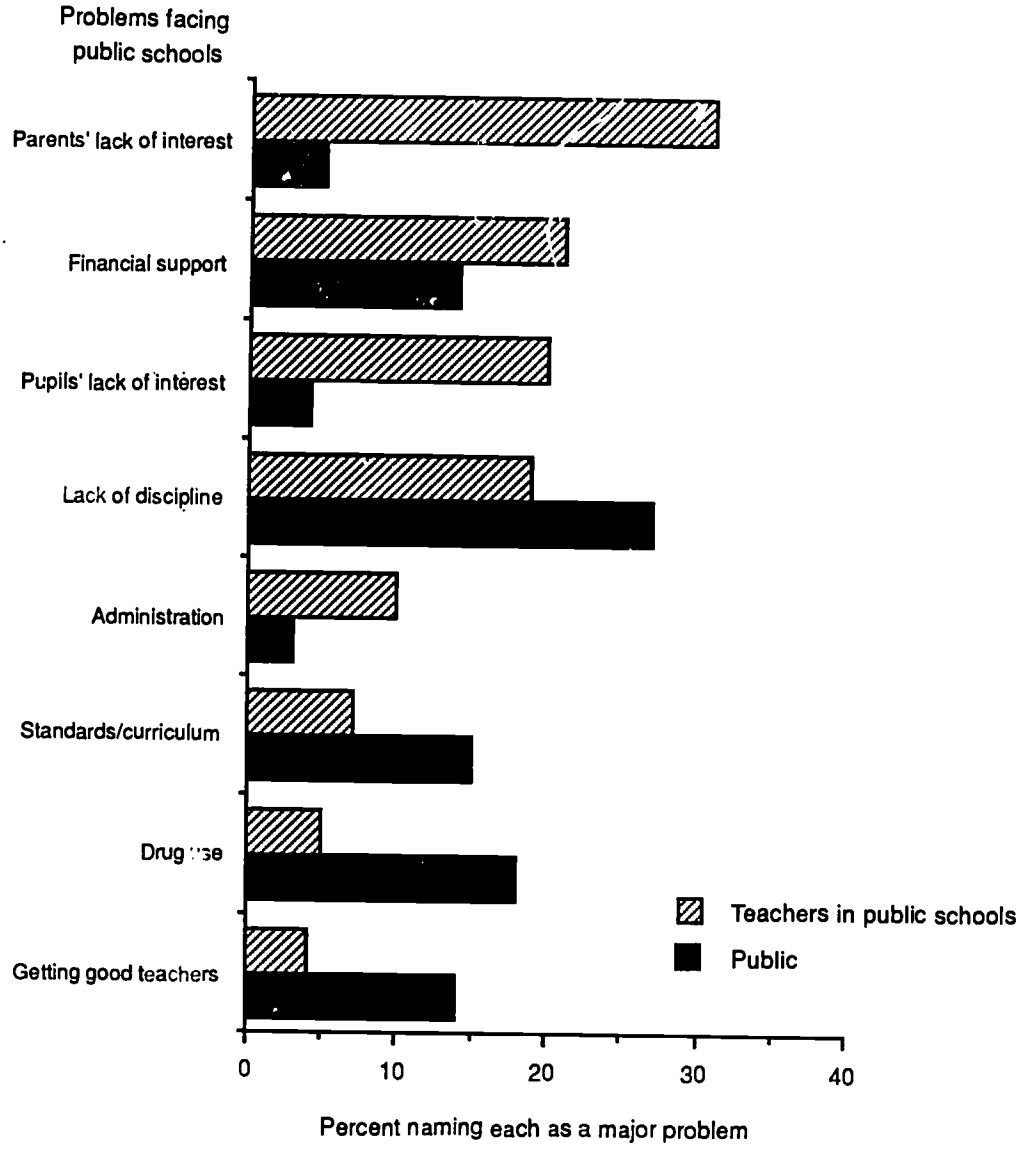
Percentage of public school teachers and the general public naming selected issues as a major problem facing the public schools: 1984

Problem	All teachers	Elementary teachers	High school teachers	U.S. public
	Percentage naming as a major problem			
Parents' lack of interest/support	31	35	26	5
Lack of proper financial support	21	20	21	14
Pupils' lack of interest/truancy	20	17	23	4
Lack of discipline	19	20	18	27
Problems with administration	10	8	12	3
Poor curriculum/poor standards	7	7	7	15
Use of drugs	5	3	6	18
Low teacher salaries	5	5	5	4
Difficulty getting good teachers	4	3	4	14
Large schools/overcrowding	4	5	2	4
Teachers' lack of interest	4	5	4	5
Integration/busing	2	2	2	6

NOTE: Fewer than 5 percent listed any other problem as major.

SOURCE: *Phi Delta Kappan*, The Gallup Poll of Teachers' Attitudes Toward the Public Schools, October 1984.

CHART 1:35—Teachers' and the public's perceptions of the biggest problems facing public schools: 1984



SOURCE: *Phi Delta Kappan,* The Gallup Poll of Teachers' Attitudes Toward the Public Schools.

- Nearly a third of all teachers thought that lack of parental interest was a major problem facing the public schools. Only 5 percent of the general public shared that view.
- The general public was more than three times as likely as teachers to feel that drug use was a major problem in the public schools.
- A lack of discipline was most likely to be considered a major problem by the general public.

C. Context: Perceptions

Public opinion ratings of schools and other national institutions

The public schools are dependent on public support in a number of ways. Opinion polls of the public's perception of the schools are good gauges of the strength of that support. The annual *Gallup Poll of the Public's Attitudes toward the Public Schools* provides data on the public's ratings of the schools. This poll has become a kind of national barometer, which is closely watched and debated each year by educators and policymakers across the Nation. For example, the National Commission on Excellence in Education, established by the Secretary of Education in 1982, cited findings from the *Gallup Poll* in its 1983 report, *A Nation at Risk.*

Since 1977 the poll has asked respondents their opinion of the schools in their community, and since 1981 the poll has also asked respondents their opinion of schools generally in the Nation.

Not surprisingly, the schools of which the public has the greatest knowledge, the local schools, have rated consistently higher than schools in general. Still, the public only rates the local schools with an average grade of C+.

These ratings are better understood in the social climate of the time. *The Gallup Report* presents data comparing the public's confidence in a variety of national institutions, thus putting the public's assessment of schools in relationship with their ratings of other institutions. The public's confidence in many institutions has recently been relatively low. Seen in the context of the public's attitude toward other institutions, the schools have not fared badly, ranking just above the median in the ratings of the listed institutions.

Table 1:36A

The public's rating of the schools: Percentage giving the schools an A, B, C, D, or F

	Rating of Local Schools							Rating of the Nation's Schools						
Year	A	B	C	D	F	Don't know	Average grade	A	B	C	D	F	Don't know	Average grade
1977	11	26	28	11	5	19	2.33	—	—	—	—	—	—	—
1978	9	27	30	11	8	15	2.21	—	—	—	—	—	—	—
1979	8	26	30	11	7	18	2.21	—	—	—	—	—	—	—
1980	10	25	29	12	6	18	2.26	—	—	—	—	—	—	—
1981	9	27	34	13	7	10	2.20	2	18	43	15	6	16	1.94
1982	8	29	33	14	5	11	2.24	2	20	44	15	4	15	2.01
1983	6	25	32	13	7	17	2.12	2	17	38	16	6	21	1.91
1984	10	32	35	11	4	8	2.36	2	23	49	11	4	11	2.09
1985	9	34	30	10	4	13	2.39	3	24	43	12	3	15	2.14
1986	11	30	28	11	5	15	2.36	3	25	41	10	5	16	2.13

—Not available.
SOURCE: *Phi Delta Kappan*, The 18th Annual Gallup Poll of the Public's Attitudes Toward the Public Schools, September 1986.

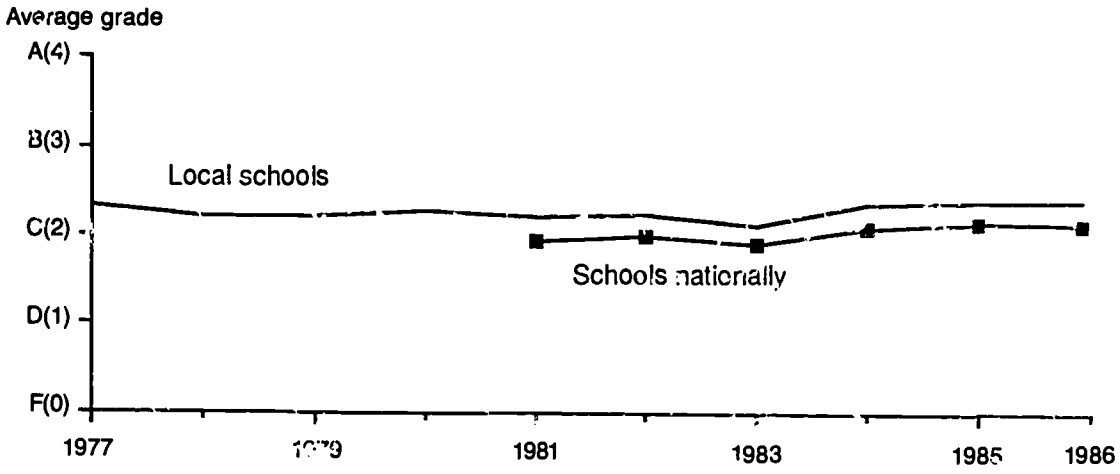
Table 1:36B

The public's confidence in selected institutions: The percentage having a "great deal" or "quite a lot" of confidence

	1973	1975	1977	1979	1981	1983	1985	1986
Institution	Percentage reporting substantial confidence in the institution							
Church	66	68	65	65	64	62	66	57
Military	—	58	57	54	50	53	61	63
Supreme Court	44	49	46	45	46	42	56	53
Banks	—	—	—	60	46	51	51	49
Schools	58	—	54	53	42	39	48	49
Congress	42	40	40	34	29	28	39	41
Newspapers	39	—	—	51	35	38	35	37
Big business	26	34	33	32	20	28	31	28
Television	37	—	—	38	25	25	29	27
Labor	30	38	39	36	28	26	28	29

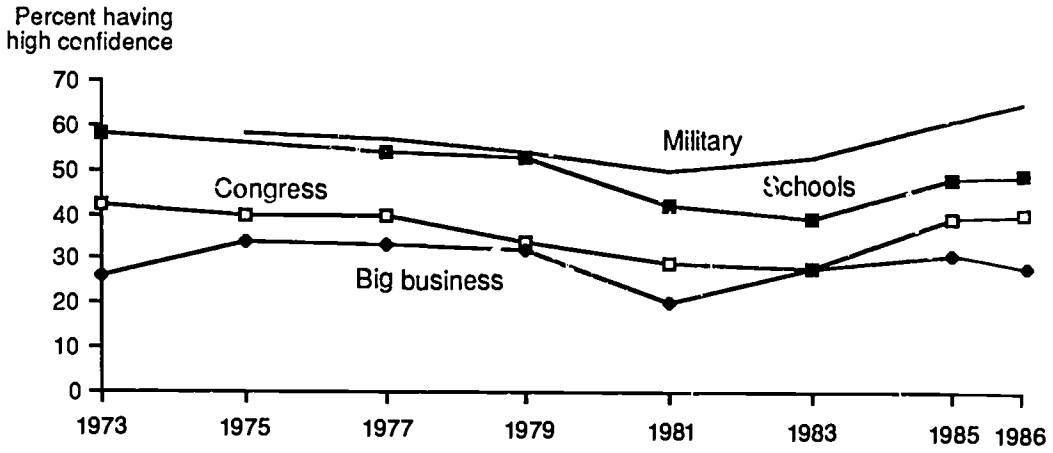
—Not available.
SOURCE: The Gallup Poll, "Public Losing Confidence in Organized Religion," December 21, 1986.

CHART 1:36A—Trends in the public's ratings of public schools



SOURCE: *Phi Delta Kappan*, The 18th Annual Gallup Poll of the Public's Attitudes Toward the Public Schools.

CHART 1:36B—Trends in the public's confidence in selected national institutions



SOURCE: The Gallup Report.

- Respondents give the schools in their own community higher marks than they give the public schools nationally, a C+ for the local schools but only a C for schools nationally.
- While the public's confidence in the schools slipped from 1973 to 1983, its confidence in several other institutions also declined during that period.
- The public's confidence in schools, along with several other institutions, rose between 1983 and 1986.

Graduation requirements in public and private high schools

Recently, considerable interest has focused on the amount of academic effort required for high school graduation. One stimulus for this interest has been the 1983 report of the National Commission on Excellence in Education, *A Nation at Risk*, which recommended as a minimum for all students a certain number of courses in four subjects—English, social studies, science, and mathematics.

In 1986, private schools approximated the Commission's recommendations of 4 years of English and 3 for both social studies and mathematics. However, they fell a half-year short of the 3 years recommended for science. No information is available regarding the Commission's recommendation of one-half year of computer science or on the extent to which potential college students follow the recommended 2 years of foreign language for the college-bound. (Trend data on private school graduation requirements are unavailable.)

On average, public school districts in 1984–85 required much less math and science coursework than the Commission recommended and about 1 year less than required in private high schools in 1985–86. Graduation requirements in English and social studies for public school districts were only slightly below the Commission's recommendations and private school requirements. Requirements at the district level had increased since 1981–82 and are expected to increase further by 1987–88.[1]

Almost no school districts required computer science courses in 1981–82, but 22 percent expected to have such a requirement by 1987–88. Regarding foreign languages, a few school districts do have graduation requirements applying to all students: 2 percent in 1981–82, 5 percent in 1984–85, and 11 percent expected for 1987–88.[2]

[1]See Indicator 1:38 for information about trends in State graduation requirements for public school students. Differences between district and State averages for graduation requirements reflect differences both in the way each collects data and in the way each calculates the averages.

[2]U.S. Department of Education, Center for Education Statistics, "Public High School Graduation Requirements," *OERI Bulletin*, 1986.

Table 1:37A

Average years of coursework required for high school graduation in private schools with grade 12: 1985–86

School characteristic	Subject area				
	Mathematics	Science	English	Foreign languages	Social studies
Total	2.8	2.5	3.9	1.2	3.1
Orientation					
Catholic	2.6	2.3	4.0	1.4	3.0
Other religious	2.8	2.6	3.9	.9	3.2
Nonsectarian	3.0	2.5	4.0	1.9	2.9
Type/level[1]					
Secondary	2.7	2.3	4.0	1.4	3.0
Combined	2.9	2.6	3.9	1.1	3.1
Other	2.8	2.7	4.0	1.0	3.4
Recommendations of National Commission on Excellence in Education[2]	3.0	3.0	4.0	[3]2.0	3.0

[1]Secondary and combined are regular schools, while other schools are primarily alternative schools. Secondary schools have no grade lower than 7, while combined schools have at least one grade lower than 7.

[2]An additional half year was recommended in computer science. However, data were not gathered about coursework requirements in computer science.

[3]The Commission's recommendations about foreign languages applied only to the college-bound, not to all students. The figures for actual requirements represent what was required for all graduates.

SOURCE: U.S. Department of Education, Center for Education Statistics, *Private Schools and Private School Teachers: Final Report of the 1985–86 Private School Study*, 1987.

Table 1:37B

Average years of coursework required for high school graduation by public school districts with high schools

School year	Subject area				
	Mathematics	Science	English	Foreign languages	Social studies
1981–82	1.6	1.5	3.6	([1])	2.6
1984–85	1.9	1.8	3.8	.1	2.8
1987–88[2]	2.3	2.0	3.9	.2	2.9
Recommendations of National Commission on Excellence in Education[3]	3.0	3.0	4.0	[4]2.0	3.0

[1]Less than 0.05 years.

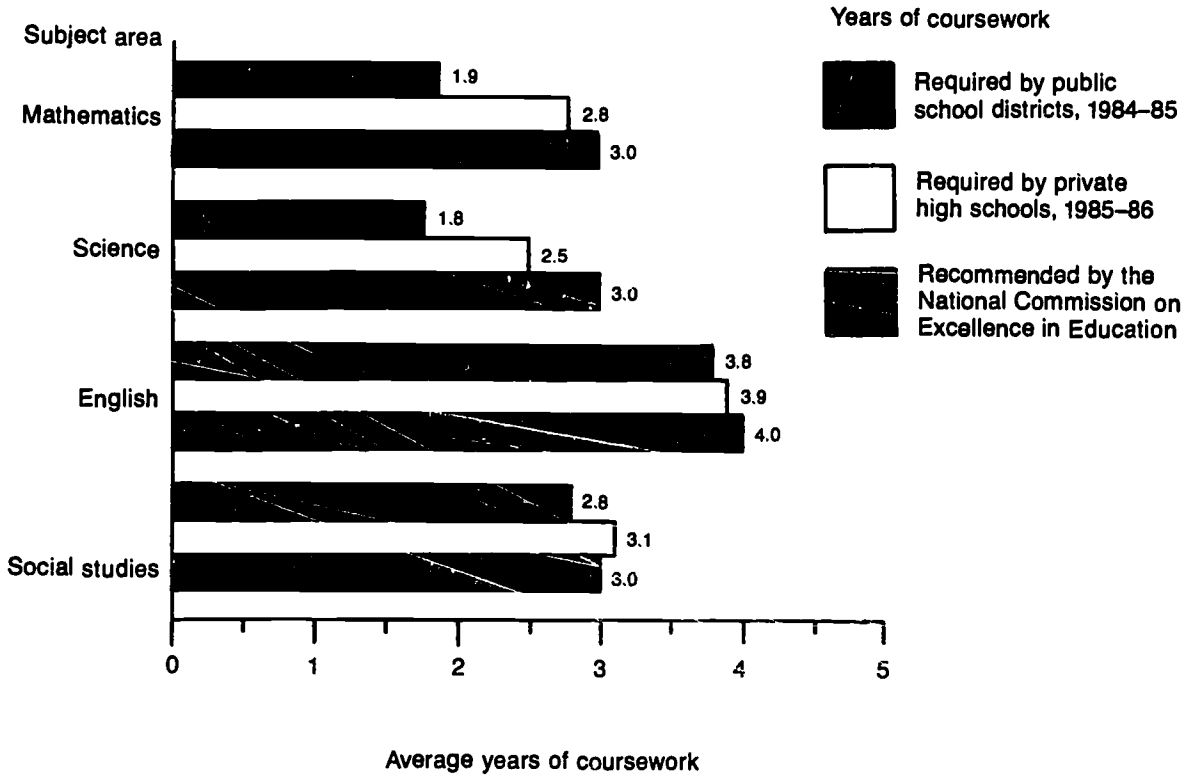
[2]Expectations as of fall 1985 about requirements for seniors graduating in 1988.

[3]Another half year of coursework was recommended in computer science. Almost no school districts had requirements in this area in 1981–82. That situation changed by 1984–85, when the average for all school districts was 0.1 years of coursework required for graduation in computer science; the expected average for 1987–88 is 0.2 years.

[4]The Commission's recommendations about foreign languages applied only to the college-bound, not to all students. The figures for actual requirements represent requirements for all graduates.

SOURCE: U.S. Department of Education, Center for Education Statistics, "Public High School Graduation Requirements," *OERI Bulletin*, 1986; and unpublished tabulations.

CHART 1:37—Average years of coursework required for high school graduation



SOURCE: Center for Education Statistics, *Private Schools and Private School Teachers: Final Report of the 1985–86 Private School Study, Public High School Graduation Requirements,* and unpublished tabulations.

- Private school graduation requirements approximate the recommendations of the National Commission on Excellence in Education in English, social studies and mathematics, but fall somewhat short in science.
- In mathematics and science, graduation requirements for public schools were considerably lower than either private school requirements or the recommendations of the National Commission on Excellence in Education.

C. Context: Requirements

State high school graduation requirements in basic subjects

One of the major recommendations of the National Commission on Excellence in Education was that "State and local high school graduation requirements be strengthened. . . ." While the States had been increasing high school graduation requirements before the publication of *A Nation At Risk*, the Commission's report created a climate of public opinion in which States could more easily enact their education agendas.

Since *A Nation At Risk*, there has been much activity by State legislatures, boards, and departments of education to toughen the standards in their systems. Of course, State-mandated standards are not a direct measure of what happens in the classroom, but they can serve as an important indicator of intent to improve those aspects of schooling over which State policy officials exercise some control.

By 1986, the District of Columbia and 49 States (all except Colorado) had established a minimum number of units required for high school graduation. Of these, 39 States and the District of Columbia had increased the number of units required for high school graduation between 1980 and 1986. See table 1:38-1 for State-by-State details.

The following data present changes in the average number of Carnegie units (1-year courses) required in basic subjects in order to graduate from high school, and the number of States involved.

While the State role in mandating requirements has grown somewhat in recent years, the responsibility for implementing such requirements remains at the local level.[1] Moreover, many States have strong traditions of local control in education, and local requirements vary from and may even surpass State requirements.

The average 1982 high school graduate took a total of 21 Carnegie units. Of these, 11.5 were in the "new basics" recommended by the National Commission on Excellence in Education (English, mathematics, sciences, social studies, computer science, and foreign languages) and 9.5 units were in other subjects such as business, trade and industry, home economics, arts, and personal development.[2]

[1]For a major statement on State and local roles in the next stage of education reform, see *Time for Results: The Governors' 1991 Report on Education*. The National Governors' Association, Washington, DC, August 1986. School districts' graduation requirements in 1981–82 and 1984–85 and expected requirements in 1987–88 are reported in *Public High School Graduation Requirements*, Center for Statistics, Fast Response Survey System, CS 86-225b, 1986.

[2]Center for Education Statistics. *The Condition of Education, 1986 Edition*.

Table 1:38

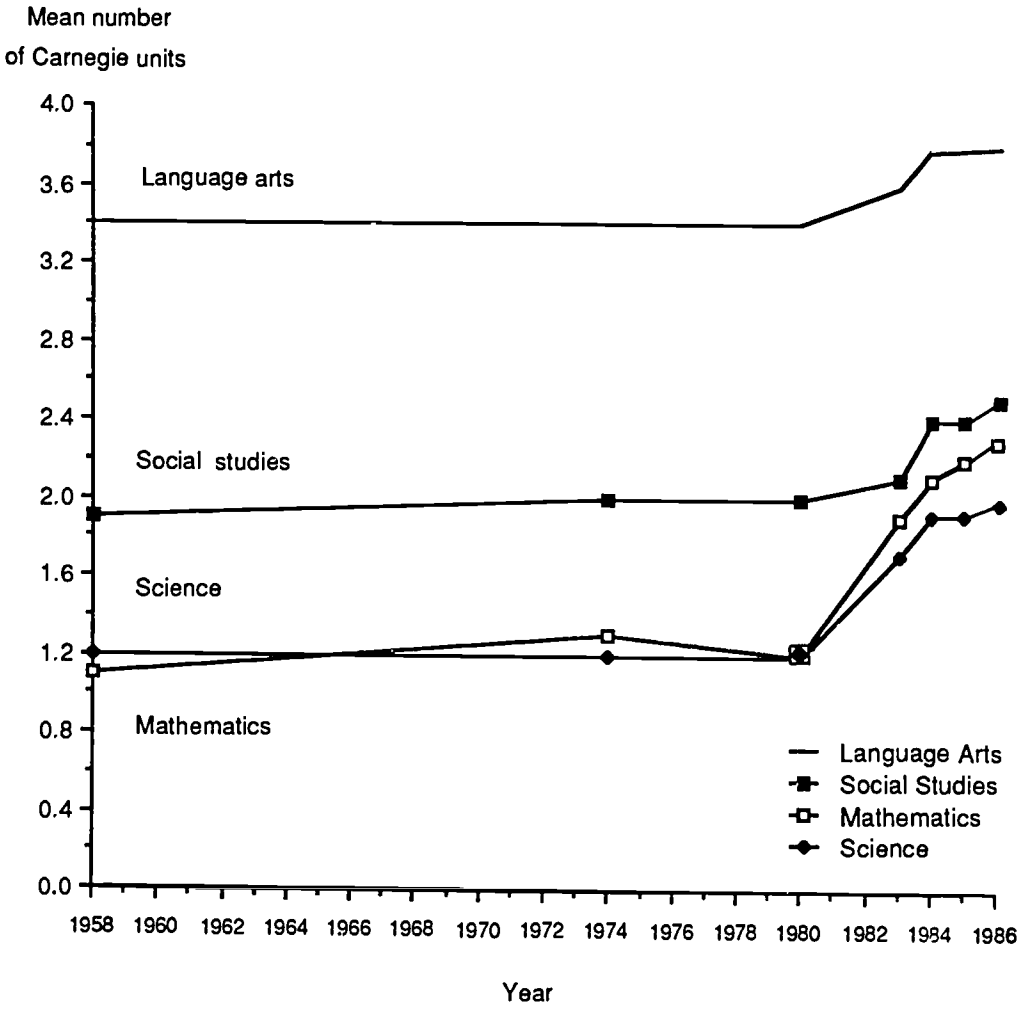
Trends in State-required Carnegie units for high school graduation, for language arts, social studies, mathematics, and science: 1958 to 1986

Year	Language arts		Social studies	
	States requiring courses	Mean units required	States requiring courses	Mean units required
1958	37	3.4	44	1.9
1974	40	3.4	45	2.0
1980	39	3.4	42	2.0
1983	41	3.6	44	2.1
1984	45	3.8	49	2.4
1985	45	3.8	49	2.4
1986	45	3.8	49	2.5

Year	Mathematics		Science	
	States requiring courses	Mean units required	States requiring courses	Mean units required
1958	31	1.1	31	1.2
1974	36	1.3	35	1.2
1980	35	1.2	35	1.2
1983	38	1.9	36	1.7
1984	44	2.1	44	1.9
1985	45	2.2	45	1.9
1986	45	2.3	45	2.0

SOURCE: Education Commission of the States, Department of Research and Information, *Clearinghouse Notes*, various years.

CHART 1:38—State-required Carnegie units by subject: 1958-1986



SOURCE: Education Commission of the States, Clearinghouse Notes.

- After 20 years of stability, there was a sharp increase after 1980 in the number of Carnegie units in mathematics and science required by the States for high school graduation.
- There has been a smaller increase in the required units for social studies and language arts.

Minimum competency testing for high school graduation

The interest in minimum competency testing predates the current wave of educational reform. This interest, rooted in the States' desire for educational accountability, began in the mid- to late 1970's. As of 1986, 25 States had enacted minimum competency testing for high school graduation.

There are several combinations of State and local options for implementing a program of minimum competency testing for high school graduation. For instance, in some States, local schools have the option to set their own standards for these competency tests. In some cases where the State sets the standards, local schools have the option not to use the results of the examination for grade promotion or graduation.

Testing to award a high school diploma is not the only purpose for which achievement standards are established. Other purposes include setting standards for grade promotion and identifying students in need of remediation. By 1986, 40 States had either taken legislative or State board action to require or permit schools to identify minimum basic skills that students should acquire. State policies differ in many respects—including the grade levels and subjects involved, the role of the test in decisions about promotion, and remediation.

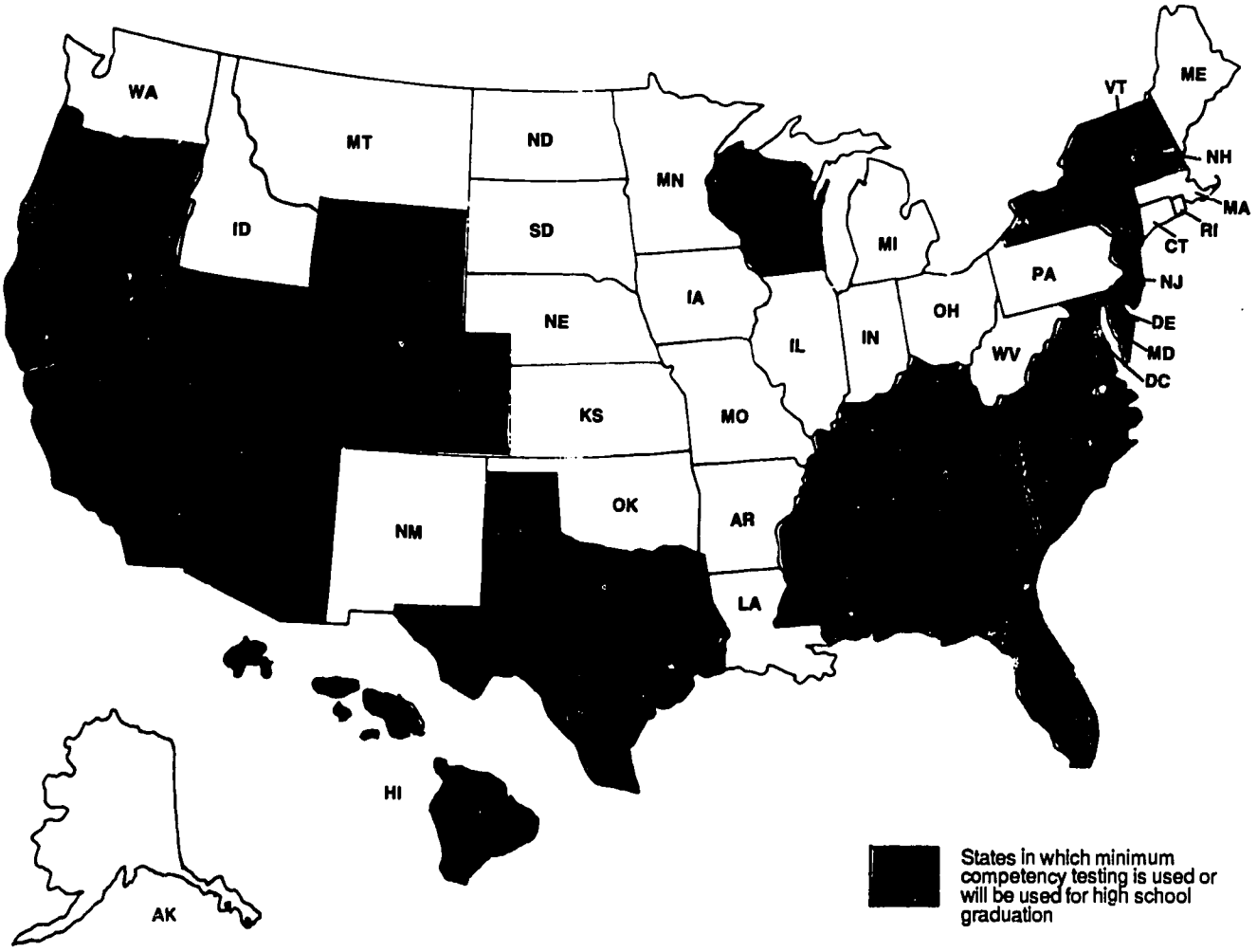
Table 1:39

States which have enacted minimum competency testing requirements for high school graduation: 1986

State	Required for high school graduation	Government level setting standard	First graduating class assessed
Alabama	Yes	State	1985
Arizona	Yes	State/local	1976
California	Yes	State/local	1979
Colorado	Optional	Local	—
Delaware	Yes	State	1981
Florida	Yes	State/local	1983
Georgia	Yes	State	1985
Hawaii	Yes	State	1983
Kentucky	Yes	—	—
Maryland	Yes	State	1982
Mississippi	Yes	State	1987
Nevada	Yes	State	1982
New Hampshire	Optional	State	—
New Jersey	Yes	State	1985
New York	Yes	State	1979
North Carolina	Yes	State	1980
Oregon	Yes	Local	1978
South Carolina	Yes	State	1990
Tennessee	Yes	State/local	1982
Texas	Yes	State	1987
Utah	Yes	Local	1988
Vermont	Yes	State	1981
Virginia	Yes	State/local	1981
Wisconsin	Optional*	Local	—
Wyoming	Optional	Local	1981

—State did not report this information.
*While district participation is voluntary, test items are available from a State test bank.
SOURCE: Education Commission of the States, *Clearinghouse Notes*, "State Activity—Minimum Competency Testing," November 1985, and personal communication.

CHART 1:39—States using minimum competency testing for purposes of high school graduation: 1986



SOURCE: Education Commission of the States, Clearinghouse Notes.

- In 1986, 25 States had enacted regulations regarding minimum competency testing for high school graduation.

C. Context: Requirements

Competency testing for teacher certification

The States have been predominant in the current educational reform movement and have been particularly active in seeking ways to improve the quality of teachers in elementary and secondary schools. One way of doing this is to regulate the entry of teaching candidates into the teaching profession. To screen new teacher candidates most States use competency testing, which had its genesis among Southern States in the mid- to late 1970's. The purpose is to exclude teaching candidates deficient in basic skills and knowledge.

The table below lists those States that have enacted teacher competency testing as a requirement for initial certification, or that have legislation pending. Many States also use competency tests as part of admission requirements into teacher education programs, and some have enacted testing to recertify experienced teachers.

One subject of debate concerns what the tests should cover. No nationally accepted test exists. Some States use commercially developed tests, and some use tests of their own design. Tests cover basic skills, subject matter, pedagogy, or a combination.

While there is no agreement on which test or type of test is most suitable, the concept of testing is generally viewed positively by the major teachers' unions and by the teachers themselves.[1] The Carnegie Forum on Education and the Economy recently proposed a three-stage voluntary assessment process covering subject matter, education courses, and teaching performance, all under the aegis of a National Board for Professional Teaching Standards.[2]

[1]Metropolitan Life Insurance Company and Louis Harris and Associates, *The American Teacher, 1986.*

[2]Carnegie Forum on Education and the Economy, *A Nation Prepared,* 1986.

Table 1:40

States with testing programs for initially certifying teachers: 1987

State	Enacted	Effective	Test used[1]	State	Enacted	Effective	Test used[1]
Alabama	1980	1981	State	Nevada	1984	1990	PPST
Arizona	1980	1980	State	New Hampshire	1984	1985	PPST
Arkansas	1979	(2)	NTE	New Jersey	1984	1985	NTE
California	1981	1982	CBEST	New Mexico	1981	1983	NTE
Colorado	1985	1987	(2)	New York	1980	1984	NTE
Connecticut	1982	1987	NTE	North Carolina	1978	1985	NTE
Delaware	1982	1983	PPST	North Dakota	1986	(2)	(2)
Florida	1978	1980	State	Ohio	1986	1987	(2)
Georgia	1975	1980	State	Oklahoma	1980	1982	State
Hawaii	1986	1986	NTE	Oregon	1984	1985	CBEST
Idaho	(3)	(2)	NTE	Pennsylvania	1985	1987	NTE
Illinois	1985	1988	State	Rhode Island	1985	1986	NTE
Indiana	1984	1985	NTE	South Carolina	1979	1982	NTE and State
Kansas	1984	1986	NTE and PPST	South Dakota	1985	1986	NTE
Kentucky	1984	1985	NTE	Tennessee	1980	1981	NTE
Louisiana	1977	1978	NTE	Texas	1981	1986	State
Maine	1984	1988	NTE	Virginia	1979	1980	NTE
Maryland	1986	1987	NTE	West Virginia	1982	1985	State
Massachusetts	1985	1989	(2)	Wisconsin	1986	1987	(2)
Michigan	(3)	(2)	(2)				
Minnesota	1986	1988	PPST				
Mississippi	1975	1977	NTE				
Missouri	1985	1987	(2)				
Montana	1985	1986	NTE				
Nebraska	1984	1987	(2)				

[1] Tests: CBEST=California Basic Education Skills Test; NTE=National Teacher Examination; PPST=Pre-Professional Skills Test; State=State-developed test.
[2] To be determined.
[3] State approval pending.

SOURCES: American Association of Colleges for Teacher Education, *Teacher Education in the States,* December 1986. Lawrence M. Rudner, *What's Happening in Teacher Testing—1987 (An Analytical Catalogue of State Teacher Testing Programs),* unpublished staff paper, Office of Educational Research and Improvement, U.S. Department of Education, April 1987. Education Commission of the States, *Clearinghouse Notes,* April 1987.

CHART 1:40—State enactment of testing programs for initial certification of teachers: 1987

SOURCE: Lawrence M. Rudner, *What's Happening in Teacher Testing—1987.*

- As of 1987, 44 States have enacted competency testing programs as part of the process of initially certifying teachers.

Postsecondary Education Indicators

The 16 indicators presented in this section span the categories of outcomes, resources, and context. These indicators pertain to many policy issues in higher education, such as student financial aid, enrollment and participation patterns, and revenue sources. The development of postsecondary indicators continues to lag behind indicator development for secondary and elementary education because of time and data constraints. As a result, the postsecondary indicators presented here provide a less comprehensive picture of the condition of postsecondary education than is available for education at the lower levels. Nevertheless, postsecondary indicator development is proceeding and has resulted in the inclusion of seven new indicators—five relating to outcomes and two to context—in this year's edition of *The Condition of Education*. As in 1986, however, most indicators pertain to higher education rather than to all types of postsecondary education. This is due to a lack of reliable data, particularly over time, for proprietary and other postsecondary institutions that are not colleges and universities.

Outcomes

Student performance: National data on the academic achievement of college students are scarce and inadequate. Although some institutions and States have developed assessment programs, the higher education community has not yet developed and applied national measures of what students are learning in higher education. The only scores available are for students taking various tests in the process of applying to graduate and professional schools. Of those tests, only the Graduate Record Examination (GRE) can be used to make comparisons over time, and the comparisons apply only to people taking these particular tests, a self-selected and changing subset of American college students.

Comparing scores of GRE test-takers in 1985 with those in 1964 reveals some interesting trends across fields *(Indicator 2:1)*. Scores in 1985 were generally lower than in 1964 in the humanities, social sciences, and education. Scores were generally unchanged or improved for scientific and technical fields.

Transitions: Other outcomes concern levels of educational attainment, types of degrees awarded, and fields of study. The proportions of the population 25 to 34 years old attending and completing college rose substantially during the 1970's but were generally stable during the first half of the 1980's *(Indicator 2:2)*. Black as well as white young adults participated in these increases. In fact, growth during the 1970's was more than twice as high for blacks as for whites. As a result, the black/white gap in college attendance and completion rates has generally declined.

The number of associate degrees has risen sharply over the past decade and a half *(Indicator 2:3)*. It rose steadily during most of the 1970's, dropped off in 1979 and 1980, and then began to climb again. More than twice as many associate degrees are awarded in occupational as in arts and sciences fields.

Throughout the 1970's and continuing into the mid-1980's, the distribution of bachelor's degrees conferred has shifted away from the arts and sciences *(Indicator 2:4)*. The decrease has been most pronounced in the social sciences. On the other hand, many technical/professional fields grew during the period. For example, the proportion of bachelor's degrees awarded in business and management increased substantially. One exception to the overall increase in technical/professional fields has been education. The number of education degrees awarded in recent years has declined steadily, along with education's portion of all bachelor's degrees.

Trends in the distribution of bachelor's degrees and in academic performance (as measured imperfectly by GRE scores) vary in similar ways across fields. Scores have declined in the same fields in which bachelor's degrees have been declining—the social sciences, humanities, and education. They have increased or remained stable, however, in technical fields, which have been growing in number and proportion of degrees.

Important changes in the distribution of fields of study have also occurred at the master's and doctor's degree levels *(Indicator 2:5)*. At the master's level, there has also been a shift away from arts and sciences toward technical/professional fields, save for education, which has declined in relation to other fields since the mid-1970's. Degrees in arts and sciences also declined at the doctoral level over the last decade and a half but more modestly than at the other levels.

Trends in the number and types of degrees awarded to women also indicate higher education outcomes *(Indicator 2:6)*. By showing changes in the status of women in higher education, the indicator points to changes in their earning potential. Since 1971, the proportion of degrees earned by women has moved generally upward at all degree levels. In addition, women have been receiving a growing proportion of the degrees awarded in fields offering high wages and expanding job opportunities.

Another measure of the performance of higher education is how former students fare in the larger society. *Indicator 2:7* shows the transition from college to the world of work and to further education. Among students who received bachelor's degrees in the early and mid-1980's, nearly three-quarters were working full time and a little more than 1 in 10 were attending school and not working full time in the 1–2 years following graduation. One's college major is related to the likelihood of both full-time employment and further education. Compared with majors in technical/professional fields, arts and sciences majors were less likely to work full time immediately after completing their B.A.'s but were more likely to attend school and not work full time.

Indicator 2:8 shows that people who have attended college have higher incomes than those who have not, and that this advantage has been increasing since the late 1970's, after declining earlier in that decade. In addition, unemployment rates are lower for those who have attended college. Furthermore, college graduates have lower unemployment rates and higher incomes than those who attend college but do not obtain a bachelor's degree.

Resources

Another important set of indicators relates to higher education resources. They include human resources (faculty), material resources (buildings, library books, computers), and fiscal resources, which pay for the human and material ones and for other costs such as student assistance. The three resource indicators in this report all relate to fiscal matters. Indicators of human and material resources will be included in future editions.

Fiscal resources: Expenditure levels are one way to measure the level of resources devoted to higher education and to gauge changes over time. *Indicator 2:9* shows that expenditures per student increased by nearly one-half between 1980 and 1985 and by 2 percent after accounting for inflation. The indicator also shows that, except for 2-year schools, private institutions spend more per student than similar public ones, and that the difference widened somewhat during the 1980's.

While expenditures represent one side of the financial balance sheet for higher education institutions, revenues represent the other. *Indicator 2:10* describes who is paying for higher education and how that has changed over time. It shows that more than half the current fund revenues for private institutions come from tuition and fees, while State and local government appropriations provide a similarly large proportion of revenues for public institutions. Revenue trends during the 1980's, however, were similar for both public and private institutions. Tuition and fees grew as a share of institutional revenues. At the same time there was a decrease in the share provided by public revenues.

Student financial aid is an important source of funds to help families and students cover the cost of college. Over the last decade, the emphasis in Federal student aid programs has shifted from grants to loans *(Indicator 2:11)*.

Context

Higher education operates within the context of the larger society. The nature of the external environment and the links between that environment and institutions of higher education influence the operation and outcomes of higher education. Five context indicators, all of which relate in one way or another to student characteristics, are presented in this report.

Student characteristics: Enrollment levels and the composition of enrollment affect higher education in several ways. The number of students and the types of institutions they attend reflect the demand for higher education services and also have an impact on revenue levels. Student characteristics indicate the extent to which various subgroups in the population are participating in higher education.

The 1970's were a period of rapid change in enrollment patterns, while the first half of the 1980's has been characterized by less change and some reversal of earlier trends. This pattern can be seen in total enrollment trends, enrollment by institutional characteristics, and student characteristics.

Total enrollment in higher education increased steadily from 1970 to 1983 *(Indicator 2:12)*. Following a dip in 1984, enrollment increased in 1985 and is estimated to have increased again in the fall of 1986. Enrollment did not decline in the first half of the 1980's, despite shrinkage in the number of 18- to 24-year-olds. This was because enrollment rates increased for this age group and for students 25 and older *(Indicator 2:14)*.

Two-year institutions grew rapidly during the 1970's, increasing their share of higher education enrollments from one-fourth to more than one-third *(Indicator 2:12)*. However, the numbers and proportions of students in these institutions have fallen since 1982.

As enrollments, particularly those in 2-year institutions, were growing during the 1970's, the composition of the student body was changing. These changes resulted in a

more diverse college population. The proportions of college students who were women, part time, and 25 years old or over increased considerably during the decade *(Indicator 2:13)*. These trends have continued since 1980, but the rate of increase has generally been slower.

Indicators 2:12, *2:13*, and *2:14* look at enrollment trends from the standpoint of higher education institutions—the size of enrollment and how its composition has been changing over time. The last indicator examines enrollment from the perspective of different population subgroups—the extent to which they participate in higher education and how this has been changing.

The participation rates* of black and Hispanic 18- to 24-year-olds over the last decade and a half have been below those for whites *(Indicator 2:15)*. Participation rates for blacks increased during the first half of the 1970's and showed some evidence of a decline after that. The racial and ethnic composition of higher education enrollments for students of all ages has changed over the last several years. As a result of proportionately larger increases in the number of Asian, Hispanic, and nonresident alien students, white enrollment declined as a proportion of total enrollment between 1976 and 1984. The number of black students has been relatively stable over the period, resulting in a slight decline in the proportion of college students who are black.

* The college participation rate of a particular subgroup is the ratio of the number of persons in the subgroup who are enrolled in college to the total number of persons in the subgroup.

Conclusion

The indicators in this section, while not providing a comprehensive picture of postsecondary education in the mid-1980's, furnish certain important insights about higher education outcomes, financial support, and student characteristics. Four new surveys from the Center for Education Statistics will provide considerable data for additional indicators in the future. These are: the Integrated Postsecondary Education Data System (IPEDS), which replaces the Center's Higher Education General Information Survey (HEGIS); the National Postsecondary Student Aid Survey (NPSAS); the National Education Longitudinal Study (NELS88); and the National Survey of Instructional Staff (NSIS). Over the next few years, these new surveys will permit the development of a variety of new indicators, such as enrollment in all types of postsecondary institutions, not just higher education institutions; the characteristics of financial aid recipients; and levels of student education-related debt. The expansion of the number and coverage of indicators will result eventually in a much broader and more complete picture of the condition of postsecondary education.

A. Outcomes: Student Performance

College student achievement: A selected profile

Since the publication of a series of national reports on the quality of American higher education in 1984 and 1985, there has been a growing interest in data concerning the academic achievement of college graduates.[1] In the recent governors' report on education, Governor John Ashcroft's committee on college quality emphasized the need to develop and implement programs to assess higher education's outcomes. In the committee's words:

"Assessment of undergraduate learning and college quality needs, at minimum, to include data about student skills, abilities, and cognitive learning; substantive knowledge of individual students and groups of students at various points in their undergraduate careers; instructional approaches used by faculty; and educational curricula. Because the nature of undergraduate education requires many important skills and cognitive abilities be acquired and developed, colleges and universities should use a number of assessment approaches and techniques."[2]

At least eight States have initiated assessment programs in their public institutions of higher education, and others are actively considering such programs. However, these assessments are designed principally for placing students, admitting them to special programs, or demonstrating their competence in basic skills as a condition of advancement from the sophomore to the junior year.

The only national data on the academic outcomes of higher education come from the various tests taken by students in the process of applying to graduate and professional schools. Of the data yielded by these tests, only those from the Graduate Record Examinations offer the potential for historical comparisons. (See appendix A for a more detailed discussion of the interpretation of these data.) In 1984–85, some 272,000 college graduates and soon-to-be-graduates took the Graduate Record Examinations, and 77,000 took one of the 17 Graduate Record Subject Area Tests. Approximately 85 percent of these test-takers were U.S. citizens.

The accompanying table presents changes in student performance between 1964 and 1985 on two sections of the GRE General Examination (verbal and quantitative) and on 14 subject area tests for which there were 1,000 or more test-takers in 1984–85. The changes are presented in terms of Standard Deviation Units (SDUs), a statistical method for standardizing changes in scores from tests with different scales. Given the 21-year time frame, SDUs measure change more accurately than average scores because they account for possible differences in the range of scores.

Because of the ways in which the data from these tests were reported before 1975, it is not possible to separate the performance of U.S. citizens from that of foreign students in this table. Based on post-1975 data, though, it is fair to say that the performance of foreign students has a negative impact on results in tests requiring verbal ability and a positive impact on results in tests requiring mathematical ability.

This table should not be interpreted as an indicator of the quality of higher education in the United States. In general, the table reflects the performance of a self-selected—though large—group of test-takers who have higher educational aspirations than most of their peers.

[1]For examples, see Bennett, W.J., *To Reclaim a Legacy*, 1984; the Study Group on the Conditions of Excellence in American Higher Education, *Involvement in Learning*, 1984; and Boyer, Ernest, *College: An Undergraduate Experience in America*, 1986.

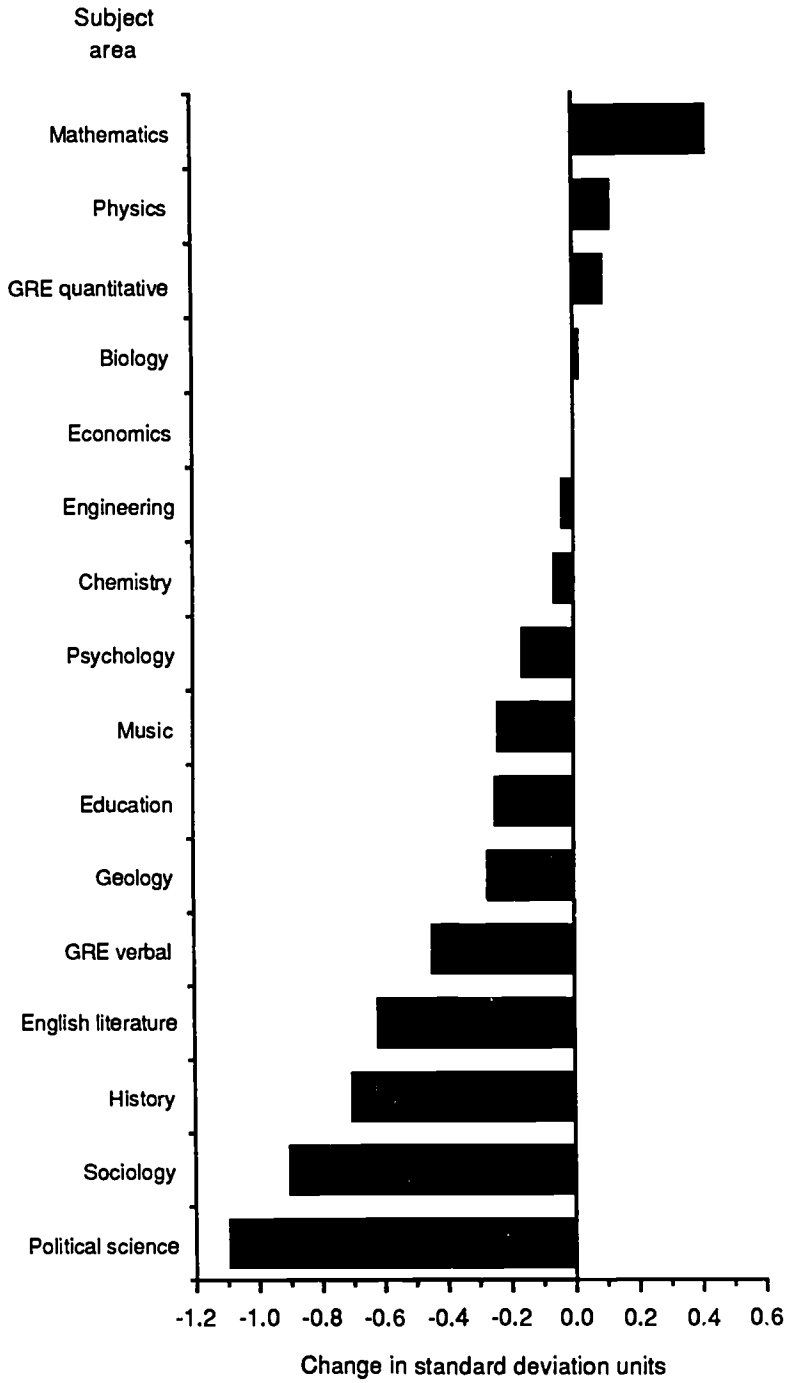
[2]National Governors' Association, Center for Policy Research and Analysis, *Time for Results: The Governors' 1991 Report on Education*, August 1986.

Table 2:1
Changes in performance on Graduate Record Examination tests, between 1964 and 1985 (unless otherwise noted)

Descriptive term and tests	Change (in standard) deviation units)	Descriptive term and tests	Change (in standard) deviation units)
Large increase:		Small decline	
Mathematics (Area test)	+.42	Psychology (Area test)	−.16
Moderate increase:		Moderate decline:	
None	—	Music (Area test: 1966–1985)	−.23
Small increase:		Education (Area test)	−.24
Physics (Area test)	+.12	Geology (Area test: 1967–1985)	−.27
No change:		Large decline	
Quantitative (General examination)	+.09	Verbal (General examination)	−.44
Biology (Area test)	+.02	Literature in English (Area test)	−.62
Economics (Area test)	.00	History (Area test)	−.70
Engineering (Area test)	−.03	Extreme decline:	
Chemistry (Area test)	−.06	Sociology (Area test)	−.90
		Political Science (Area test)	−1.08

SOURCE: Clifford Adelman, *The Standardized Test Scores of College Graduates, 1964-1982*, Washington, DC: Office of Educational Research and Improvement, U.S. Department of Education, 1985, and special tabulations.

CHART 2:1 – Changes in performance on Graduate Record Examinations (GRE) between 1964 and 1985



SOURCE: Clifford Adelman, The Standardized Test Scores of College Graduates, 1964-1982, 1985, and unpublished tabulations.

- Changes in scores on the Graduate Record Examination tests have varied by subject area.
- Scores have changed very little or moved upward on most of the scientific and technical tests but have declined on most of the social science and language subject tests.

A. Outcomes: Transitions

Trends in higher education attainment

The level of education attained by the Nation's workforce is vital to the economic welfare of its population. Increasing educational attainment is important not only for the standard of living of workers and their families, but also for the Nation's overall economic growth and international competitiveness. The trend data on college attendance and completion[1] displayed in this indicator provide information about changing educational levels among 25- to 34-year-olds.[2]

The proportions of the population 25 to 34 years old who attended college for at least 1 and at least 2 years each increased by over 50 percent during the 1970's. So did the proportion finishing at least 4 years. Attendance and completion rates stabilized during the first half of the 1980's, however. In 1986, somewhat less than half of the young adult population had attended college for 1 or more years, more than one-third had attended for 2 or more years, and nearly one-quarter had finished 4 or more years.

For black as well as for white 25- to 34-year-olds, college attendance and completion grew during the 1970's but stabilized or moderated during the first half of the 1980's (see appendix table 2:2-1). Between 1970 and 1979, growth rates were much higher for blacks than for whites. As a result, there has been a substantial narrowing of the relative gap between the two groups in the proportions attending and completing college.[3] The absolute gap in college attendance, but not completion, has also narrowed. Despite their gains relative to white young adults, black young adults are still less likely to attend college, and if they do attend, are less likely to finish.

[1]For purposes of this indicator, "college attendance" is defined as finishing at least 1 year of college and "college completion" as finishing at least 4 years. The term "college completion" does not necessarily mean receipt of a bachelor's degree. In addition, completion of 2 or more years of college is not synonymous with receipt of an associate degree. See indicator 2:3 for data on associate degrees.

[2]Data are presented only for 25- to 34-year-olds in order to focus attention on those in the early stages of their worklives who also are old enough to have completed college, with some allowance for delayed entry into higher education.

[3]The relative black/white gap is measured by the ratio of black to white attendance and completion rates. To illustrate, in 1986, 13.6 percent of black and 25.1 percent of white 25- to 34-year-olds had finished at least 4 years of college. The relative black/white gap for that year, then, was .542, or 13.6 percent divided by 25.1 percent. Stated differently, black young adults were about half as likely as white young adults to finish at least 4 years of college.

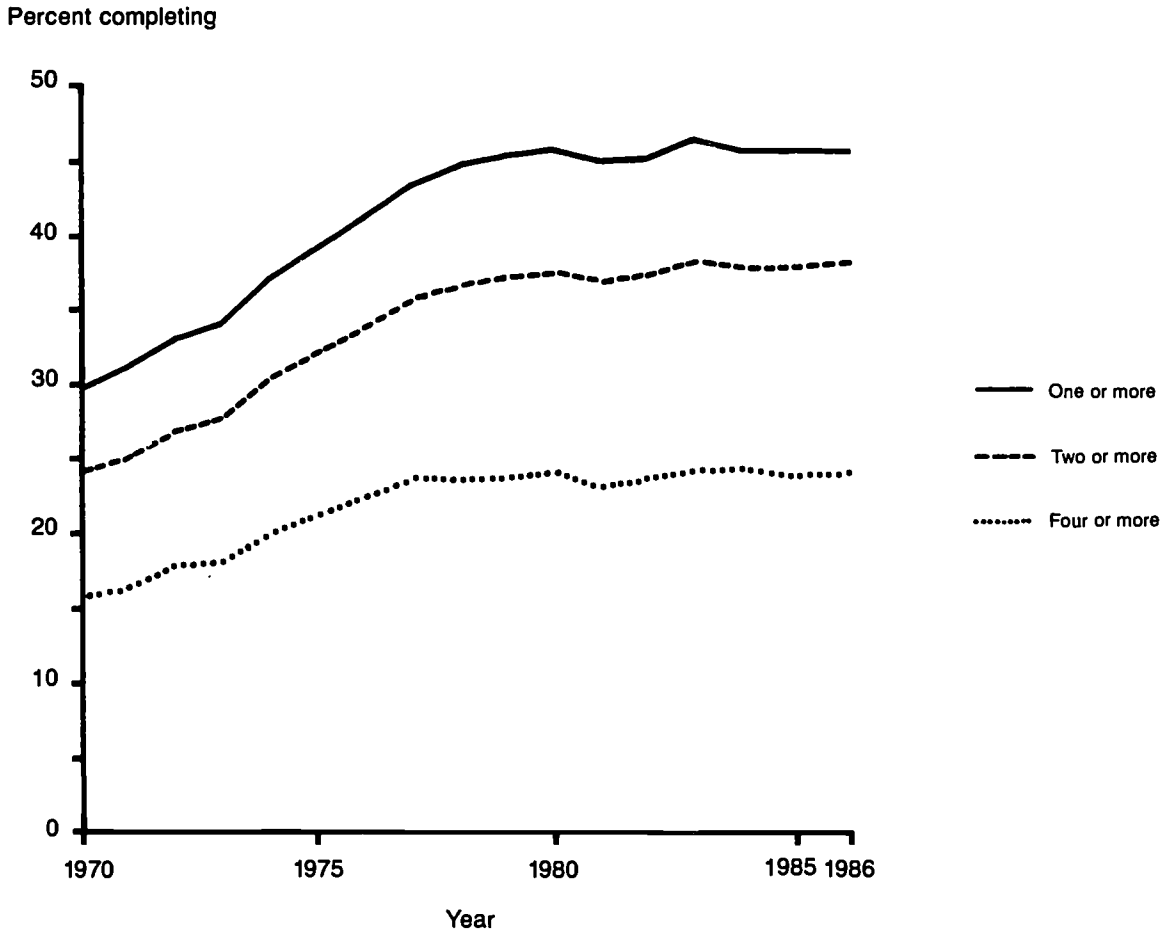
Table 2:2

Years of college completed by population 25 to 34 years old: 1970–86

Year (March)	1 or more years	2 or more years	4 or more years
		Percent	
1970	29.8	24.3	15.8
1971	31.3	25.2	16.3
1972	33.3	27.0	17.9
1973	34.2	27.8	18.2
1974	37.4	30.7	20.0
1975	39.4	32.2	21.4
1976	41.3	33.8	22.6
1977	43.6	35.9	23.8
1978	44.8	36.8	23.6
1979	45.5	37.3	23.8
1980	45.8	37.6	24.1
1981	44.9	36.8	23.2
1982	45.2	37.4	23.8
1983	46.2	38.4	24.4
1984	45.6	37.7	24.3
1985	45.8	37.8	23.8
1986	45.7	38.0	24.0
		Percent change	
1970–80	+53.7	+54.7	+52.5
1980–86	−0.2	+1.1	−0.4

SOURCE: U.S. Department of Commerce, Bureau of the Census, Current Population Reports, Series P-20, *Educational Attainment in the United States*, various years; and unpublished tabulations from the March Supplement to the Current Population Survey.

CHART 2:2—Years of college completed by 25- to 34-year-olds: 1970–86



SOURCE: Bureau of the Census, Current Population Reports.

- The proportion of 25- to 34-year-olds finishing one or more, two or more, and four or more years of college increased substantially during the 1970's.
- Higher education attainment stabilized during the first half of the 1980's.

Associate degrees conferred, by field

Through most of the 1970's, the number of students receiving associate degrees climbed fairly steadily. From 1971 to 1978, their number increased from 253,000 to 412,000, a 63 percent growth. Since then, however, the number awarded has stabilized, rising from 412,000 in 1978 to 455,000 in 1985, or only 10 percent.

About 2½ times as many associate degrees are awarded in occupational fields as are awarded in the arts and science fields.[1] Between 1983 and 1985, associate degrees in occupational fields rose from about 323,000 to about 327,000, an increase of a little over 1 percent. At the same time, arts and science associate degrees declined from about 134,000 to about 127,000, a decrease of 5 percent.[2] During this period, three fields accounted for more than 75 percent of the associate degrees awarded in occupational fields: business, engineering technologies, and health sciences (including allied health). This pattern of increasing numbers of degrees being awarded in occupational fields parallels the situation with bachelor's degrees (see Indicator 2:4).

[1]*Occupational degrees* are those in: agriculture and natural resources, architecture, business, communications, communications technologies, computer and information sciences, education, engineering, engineering technologies, health sciences, home economics, law, library and archival sciences, military technologies, parks and recreation, science technologies, protective services, public affairs, mechanics and repairers, precision production, construction trades, and transportation. *Arts and science degrees* are those in: area and ethnic studies, foreign languages, letters, liberal/general studies, life sciences, mathematics, multi/interdisciplinary studies, philosophy and religion, theology, physical sciences, psychology, social sciences, and visual and performing arts (except for graphic arts technician).

[2]In 1983, the National Center for Education Statistics introduced a new way of classifying degrees by field (delineated in *A Classification of Instructional Programs).* Data by field before 1983 are not comparable to data by field for 1983 and later years.

Table 2:3

Associate degrees awarded in occupational and arts and sciences fields: 1971–85

Year[1]	Total	Occupational	Arts and sciences
1971	252,610	(2)	(2)
1972	292,119	(2)	(2)
1973	317,008	(2)	(2)
1974	343,924	(2)	(2)
1975	360,171	(2)	(2)
1976	391,454	(2)	(2)
1977	406,377	(2)	(2)
1978	412,246	(2)	(2)
1979	402,702	(2)	(2)
1980	400,910	(2)	(2)
1981	416,377	(2)	(2)
1982	435,515	(2)	(2)
1983	456,441	322,524	133,917
1984	452,416	323,650	128,766
1985	454,712	327,325	127,387

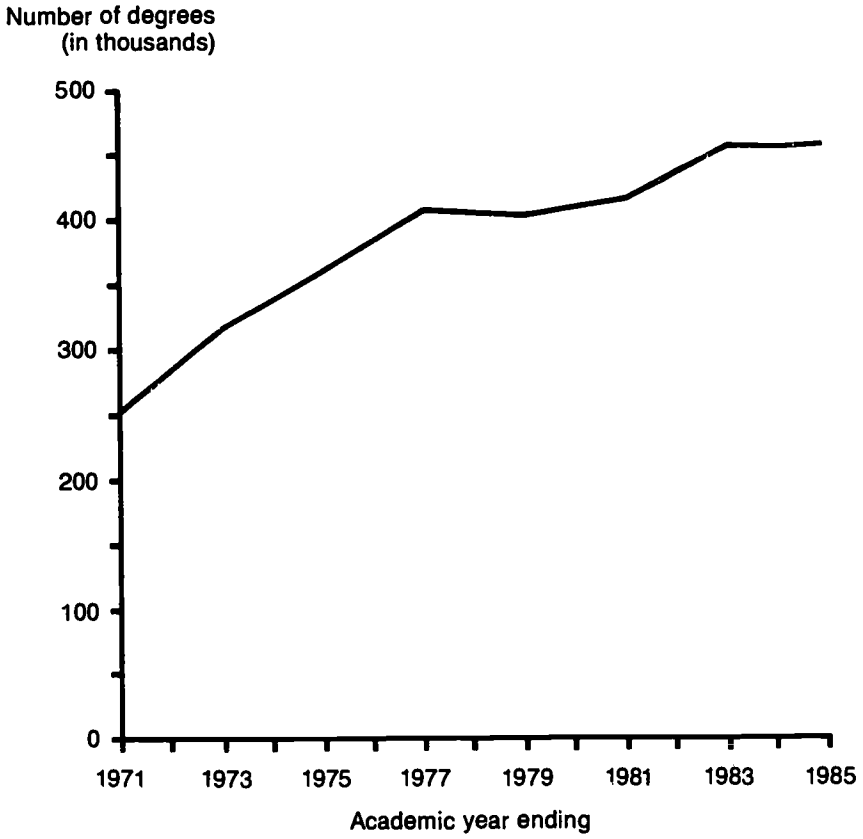
[1]Data are for the academic year ending June 30.

[2]In 1983, the National Center for Education Statistics introduced a new way of classifying degrees by field (described in *A Classification of Instructional Programs).* Data by field before 1983 are not comparable to data by field for 1983 and later years.

SOURCE: U.S. Department of Education, Center for Education Statistics, *Digest of Education Statistics, 1987* (based on surveys of "Degrees and Other Formal Awards Conferred," and unpublished tabulations).

Most associate degrees are awarded by 2-year colleges. The total number of associate degrees they award actually understates the impact of these schools on both 4-year schools and labor markets. For example, many students attend 2-year colleges only long enough to improve job performance or to acquire sufficient skills to obtain a better job. Other students may complete 2 years of work at a 2-year college and transfer to a 4-year school without obtaining an associate degree.

CHART 2:3—Number of associate degrees awarded: 1971–85



SOURCE: Center for Education Statistics, Digest of Education Statistics, 1987, 1987.

- The number of associate degrees awarded increased 80 percent between 1971 and 1985.

Bachelor's degrees conferred, by field

Trends in the number and type of bachelor's degrees awarded provide useful information to employers seeking job applicants, college administrators planning future programs, and policymakers tracking employment trends.

In recent years, the proportion of students receiving bachelor's degrees in the traditional fields of arts and sciences has steadily declined. In 1970–71, arts and sciences composed 50 percent of all bachelor's degrees conferred, but by 1984–85 composed only 35 percent. This phenomenon occurred because of the decline in the absolute number of degrees conferred in arts and sciences and the growth in the number of degrees in technical/professional fields such as business, engineering, and computer science. The number of degrees in the arts and sciences declined 19 percent from 1970–71 to 1984–85, while the number of technical/professional degrees increased 52 percent, accounting for nearly two-thirds of all degrees awarded in 1984–85.

Table 2:4-1 in the appendix provides data on bachelor's degrees awarded in each academic year from 1970–71 through 1984–85.

Table 2:4

Bachelor's degrees conferred, by field: Selected years 1970–71 to 1984–85

Field	1970–71	1972–73	1974–75	1976–77	1978–79	1980–81	1982–83	1984–85
Total	839,730	922,362	922,933	919,549	921,390	935,140	969,510	979,477
Arts and sciences	418,583	442,873	429,342	400,705	372,191	353,425	344,502	340,800
Sciences	275,072	289,613	276,853	254,550	234,242	219,424	211,292	208,595
Physical and biological sciences	81,956	85,996	90,700	90,298	83,859	78,246	75,840	77,323
Social sciences	193,116	203,617	186,153	164,252	150,383	141,178	135,452	131,272
Humanities	143,511	153,260	152,489	146,215	137,949	134,001	133,210	132,205
Technical and professional	421,147	479,489	493,591	518,784	549,199	581,715	625,008	638,677
Business	114,865	126,263	133,010	150,964	171,764	199,338	226,893	233,351
Education	176,614	194,229	167,015	143,722	126,109	108,309	97,991	88,161
Other technical and professional	129,668	158,997	193,566	224,098	251,326	274,068	300,124	317,165
Computer and information sciences	2,388	4,304	5,033	6,407	8,719	15,121	24,510	38,878
Engineering and engineering technologies	50,0 .8	51,265	46,852	49,283	62,375	75,000	89,270	96,105
Other	77,.34	103,428	141,681	168,408	180,232	183,947	186,344	182,182

SOURCE: U.S. Department of Education, Center f r Education Statistics, *Digest of Education Statistics, 1987* (based on surveys of "Degrees and Other Formal Awards Conferred," various years).

CHART 2:4A—Number of bachelor's degrees conferred, by field: 1970–71 to 1984–85

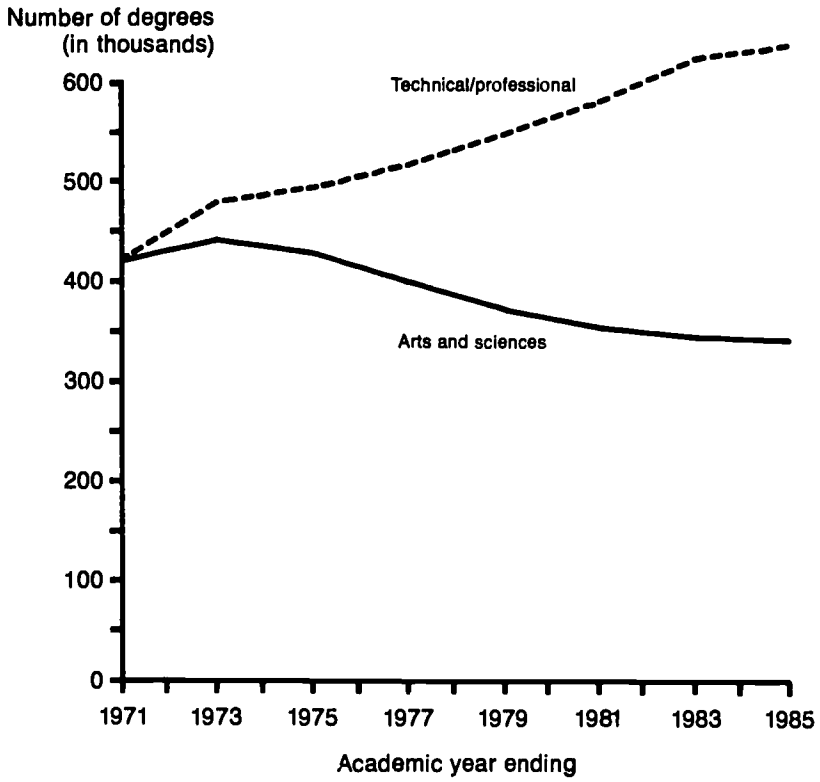
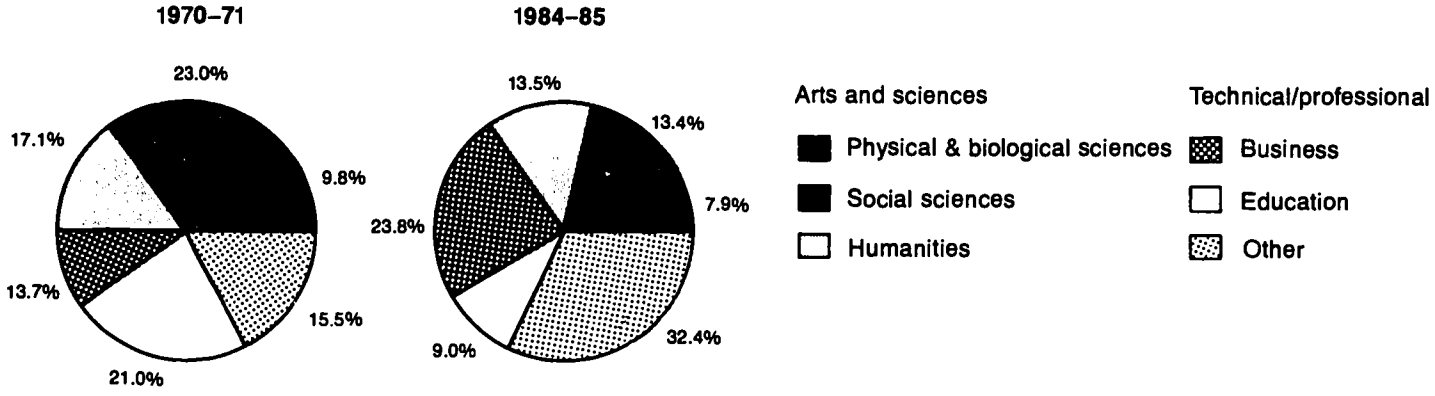


CHART 2:4B—Percentage of bachelor's degrees conferred, by field: 1970–71 and 1984–85



SOURCE: Center for Education Statistics, *Digest of Education Statistics, 1987.*

- Since academic year 1970–71, the number of bachelor's degrees awarded in the arts and sciences has declined by 78,000, while the number of technical and professional degrees awarded has incrased by 218,000.
- Technical and professional degrees increased from 50 percent of all degrees conferred in academic year 1970–71 to over 65 percent in 1984–85.

Advanced degrees conferred, by field

Trends in students' fields of concentration can provide important information on changing student interests and on labor markets. Changes in field of study may reflect students' responses to changing labor markets as well as herald ongoing or future changes in the demand for faculty in different disciplines.

Indicator 2:4, discussed earlier, shows dramatic changes in the types of bachelor's degrees awarded between 1971 and 1985. Important changes also occurred at the master's and doctor's degree levels during that time period. At the master's level, as at the bachelor's, a shift has occurred away from arts and sciences toward technical/professional fields, such as business and management. One exception to the general trend is education. Following increases between 1971 and 1976, in both absolute and percentage terms, master's degrees in education dropped in each of the following years to 1985. By 1985, the proportion of master's degrees conferred in education was much smaller than it had been in 1971. Although education is attracting a smaller percentage of master's degree students, it remains the largest single field of study at that level, accounting for over one-quarter of all degrees.

At the doctoral level, patterns were slightly different. Similar to the trend for bachelor's and master's degrees, the proportion of doctor's degrees in arts and sciences declined throughout the period from 1971 to 1985, while technical/professional degrees, taken together, increased. The proportion of doctorates in education increased from 1971 to 1977 but decreased from 1980 to 1985. By 1985, education accounted for one-fifth of all doctoral degrees, up slightly from 1971. Business and management, which grew dramatically at both the bachelor's and master's degree levels between 1971 and 1985, did not expand at the doctoral level and remains a relatively small field, accounting for fewer than 5 percent of the doctoral degrees. "Other technical/professional" disciplines, however, did expand. Relative to other disciplines, they decreased in importance from 1971 to 1977 but then grew steadily, though modestly, to 1985.

Table 2:5

Advanced degrees conferred by institutions of higher education, by field: Selected years, 1970–71 to 1984–85*

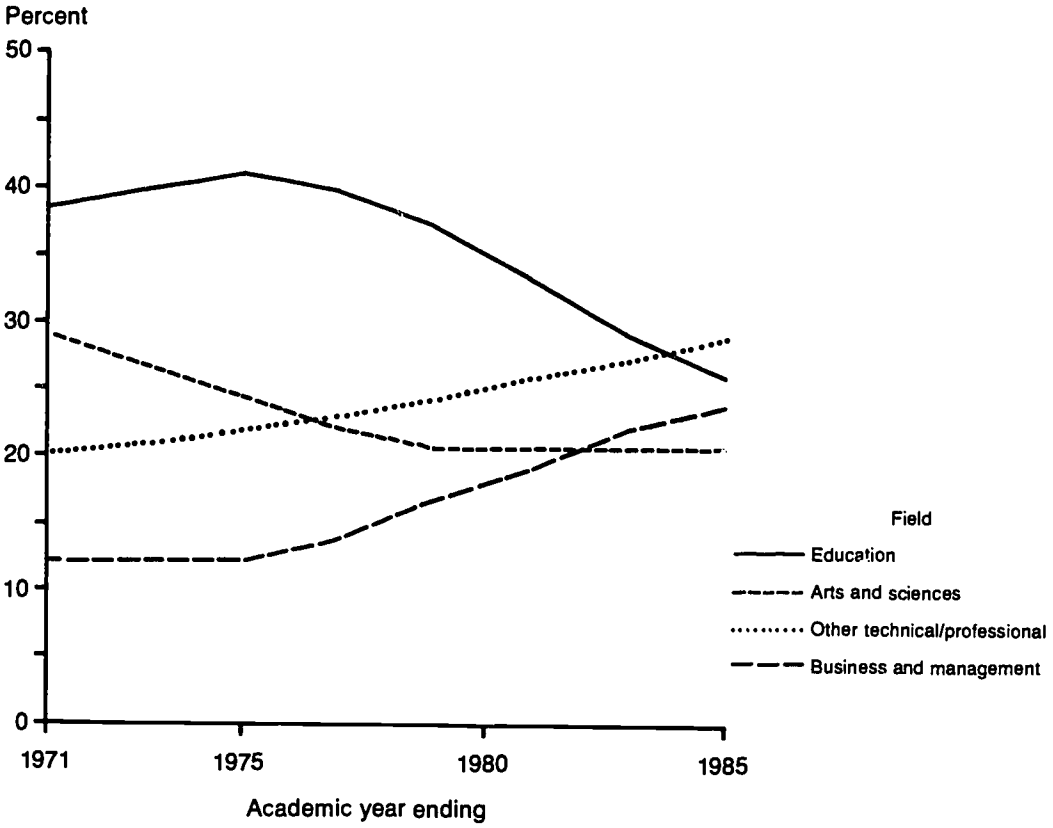
Field	1970–71	1972–73	1974–75	1976–77	1978–79	1980–81	1982–83	1984–85
				Master's degrees				
Total	230,509	263,371	292,450	317,164	301,079	295,739	289,921	286,251
Arts and sciences	67,545	70,613	72,243	70,795	64,507	61,702	60,099	59,659
Sciences	38,193	40,667	40,642	39,836	36,128	33,682	33,313	32,525
Physical and biological sciences	17,286	17,548	16,684	16,140	15,318	13,829	13,823	13,737
Social sciences	20,907	23,119	23,958	23,696	20,810	19,853	19,490	18,788
Humanities	29,352	29,946	31,601	30,959	28,379	28,020	26,786	27,134
Technical/professional	162,964	192,758	220,207	246,369	236,572	234,037	229,822	226,592
Business and management	26,481	31,007	36,247	46,420	50,372	57,898	65,319	67,527
Education	88,952	105,565	120,169	126,825	111,995	98,938	84,853	76,137
Other technical/professional	47,531	56,186	63,791	73,124	74,205	77,201	79,650	82,928
Computer and information sciences	1,588	2,113	2,299	2,798	3,055	4,218	5,321	7,101
Engineering and eng. technologies	16,443	16,619	15,348	16,245	15,495	16,709	19,350	21,557
Other	29,500	37,454	46,144	54,081	55,655	56,274	54,979	54,270
				Doctor's degrees				
Total	32,107	34,777	34,083	33,232	32,730	32,958	32,775	32,943
Arts and sciences	19,035	20,414	19,944	19,293	18,730	18,405	17,910	17,745
Sciences	14,675	15,029	14,636	14,106	13,394	13,656	13,347	13,293
Physical and biological sciences	9,234	8,710	7,985	7,561	7,374	7,587	7,308	7,534
Social sciences	5,441	6,319	6,651	6,545	6,020	6,069	6,039	5,759
Humanities	4,360	5,385	5,308	5,187	5,336	4,749	4,563	4,452
Technical/professional	13,072	14,363	14,139	13,939	14,000	14,553	14,865	15,198
Business and management	807	923	1,009	863	860	842	809	866
Education	6,403	7,318	7,446	7,963	7,736	7,900	7,551	7,151
Other technical/professional	5,862	6,122	5,684	5,113	5,404	5,811	6,505	7,181
Computer and information sciences	128	196	213	216	236	252	262	248
Engineering and eng. technologies	3,638	3,492	3,108	2,586	2,506	2,561	2,831	3,230
Other	2,096	2,434	2,363	2,311	2,662	2,998	3,412	3,703

*Appendix tables 2:5-1 and 2:5-2 contain data for every year from 1970–71 to 1984–85.

NOTE: Beginning in 1982–83, the taxonomy used to collect data on earned degrees by major field of study was revised. The figures for earlier years have been revised when necessary to reflect the new taxonomy.

SOURCE: U.S. Department of Education, Center for Education Statistics, *Digest of Education Statistics, 1987* (based on "Earned Degrees Conferred" surveys, various years).

CHART 2:5—Percentage of master's degrees conferred, by field: 1971–85



SOURCE: Center for Education Statistics, *Digest of Education Statistics, 1987.*

- The number of master's degrees in education declined between 1971 and 1985, from 39 to 27 percent of all master's degrees awarded.
- Master's degrees in arts and sciences also decreased in number between 1971 and 1985, from 29 to 21 percent of the total.
- Business and management degrees experienced substantial growth during the period, increasing steadily from 12 percent of all master's degrees in 1971 to 24 percent in 1985.

Trends in degrees earned by women

Trends in the number and type of degrees awarded to women provide an indication of their participation in higher education. Women have increased their participation at all degree levels since 1971. By 1981, they were receiving 50 percent of all bachelor's and master's degrees, up from 43 and 40 percent, respectively, in 1971. Since 1981, the trend has leveled off, with women continuing to earn about 50 percent of both types of degrees.

Women also have increased their share of first-professional and doctor's degrees. In 1971, they earned only 6 percent of first-professional degrees and 14 percent of doctor's degrees. Since then, they have received a steadily growing proportion of these degrees, earning approximately one-third of them by 1985.

In addition to increasing their overall participation at each degree level, women have been receiving a growing proportion of the degrees awarded in fields offering high wages and expanding job opportunities (see supplementary tables 2:6-1 and 2:6-2. At the first-professional degree level, for example, the proportion of medical degrees awarded to women more than tripled between 1971 and 1985, from 9 to 30 percent. Over the same period, women received a steadily growing proportion of the bachelor's and master's degrees awarded in business and management, computer and information science, and engineering. Although women continue to earn less than one-half of the degrees in many fields, and in some cases, such as engineering, still earn only a small fraction of them, they nevertheless have made great gains in the last decade and a half. These gains may ultimately be reflected in a narrowing of the earnings gap between college-educated men and women.

Table 2:6

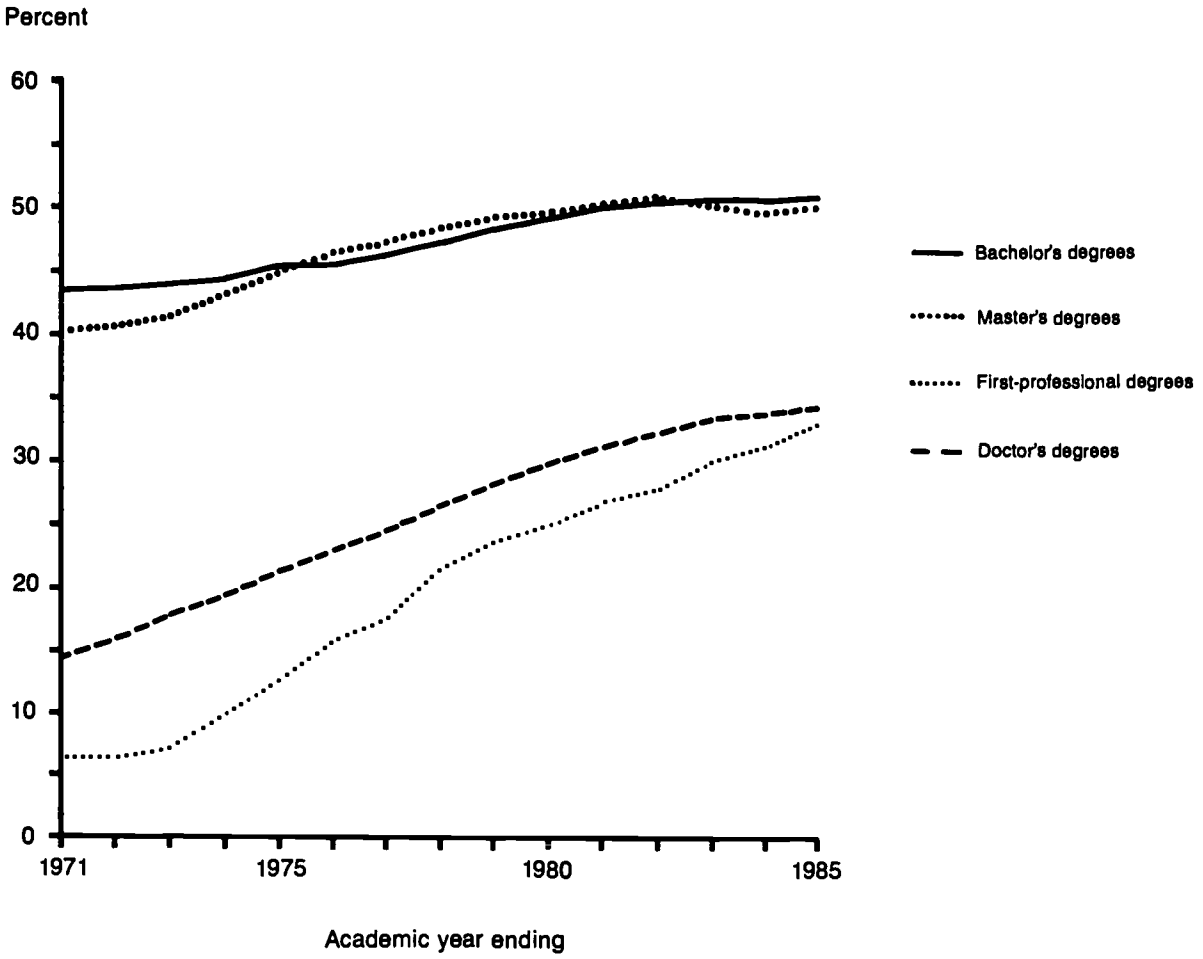
Earned degrees, by level of degree, total number and percent earned by women: 1970–71 to 1984–85

Year	Total number (in thousands)	Percent earned by women	Total number (in thousands)	Percent earned by women
	Bachelor's degrees		Master's degrees	
1970–71	839,730	43.4	230,509	40.1
1971–72	887,273	43.6	251,633	40.6
1972–73	922,362	43.8	263,371	41.3
1973–74	945,776	44.2	277,003	43.0
1974–75	922,933	45.3	292,450	44.8
1975–76	925,746	45.4	311,771	46.4
1976–77	919,549	46.1	317,164	47.1
1977–78	921,204	47.1	311,620	48.3
1978–79	921,390	48.2	301,079	49.1
1979–80	929,417	49.0	298,081	49.4
1980–81	935,140	49.8	295,739	50.3
1981–82	952,998	50.3	295,546	50.8
1982–83	969,510	50.6	289,921	50.1
1983–84	974,309	50.5	284,263	49.5
1984–85	979,477	50.7	286,251	49.9
	First-professional degrees*		Doctor's degrees	
1970–71	37,946	6.3	32,107	14.3
1971–72	43,411	6.2	33,363	15.8
1972–73	50,018	7.1	34,777	17.8
1973–74	53,816	9.8	33,816	19.1
1974–75	55,916	12.4	34,083	21.3
1975–76	62,649	15.6	34,064	22.9
1976–77	63,359	17.3	33,232	24.3
1977–78	66,581	21.5	32,131	26.4
1978–79	68,848	23.5	32,730	28.1
1979–80	70,131	24.8	32,615	29.7
1980–81	71,956	26.6	32,958	31.1
1981–82	72,032	27.5	32,707	32.1
1982–83	73,136	29.8	32,775	33.2
1983–84	74,407	31.0	33,209	33.6
1984–85	75,063	32.8	32,943	34.1

*The Center for Education Statistics recognizes 10 first-professional degree fields: Chiropractic, Dentistry, Law, Medicine, Optometry, Osteopathy, Pharmacy, Podiatry, Theology, and Veterinary Medicine. See glossary for additional details.

SOURCE: U.S. Department of Education, Center for Education Statistics, *Digest of Education Statistics, 1987* (based on HEGIS "Earned Degrees Conferred" surveys, various years).

CHART 2:6—Percentage of degrees earned by women, by degree level: 1971–85



SOURCE: Center for Education Statistics, *Digest of Education Statistics, 1987.*

- The proportion of bachelor's degrees earned by women increased from 43 percent in 1971 to 51 percent in 1985.
- The proportion of advanced and professional degrees earned by women also increased between 1971 and 1985:
  - —from 40 to 50 percent of the master's degrees;
  - —from 14 to 34 percent of the doctor's degrees;
  - —from 6 to 33 percent of the first-professional degrees.

Activities immediately following college graduation

There are many different ways to measure the outcomes of a college education. One is to examine what happens to college students after they graduate. Many former students will be working full time, but others will be continuing their education, serving in the military, or unemployed.

This indicator presents the primary activities of bachelor's degree recipients 1 to 2 years following graduation. The table shows employment for graduates in two time periods: 1981 (1979–80 graduates) and 1985 (1983–84 graduates). Two main trends emerge. First, very little change occurred over this time period; somewhat less than three-fourths of all graduates were working full time and about one in eight was enrolled in school and not working full time.

Second, wide disparities existed among fields in the proportion working full time and the proportion going to school. The fields of undergraduate study described here as technical/professional (engineering, business and management, health, education, and public affairs and social services) were associated with lower rates of school enrollment than the fields of arts and sciences. One-fourth of all arts and sciences majors were enrolled in school and not working full time after graduation. This was approximately triple the proportion of undergraduate majors in technical/professional fields who were in the same situation.

Table 2:7

Activities of recent bachelor's degree recipients, by field of study: 1981 and 1985

Major field of study	Total		Employed full time		Military		Enrolled in school		Unemployed		Not in labor force		Other	
	1981	1985	1981	1985	1981[1]	1985	1981	1985	1981	1985	1981	1985	1981	1985
	Percent													
Total	100	100	71	71	—	2	13	13	6	3	3	5	7	7
Technical/professional	100	100	80	78	—	2	7	7	4	3	3	4	6	6
Arts and sciences	100	100	56	55	—	2	24	25	8	3	4	6	8	9
Other	100	100	74	75	—	2	10	9	5	4	4	5	7	5
Technical/professional														
Engineering	100	100	84	79	—	6	8	10	4	2	4	2	(2)	2
Business and management	100	100	83	83	—	2	7	4	4	3	2	4	4	3
Health	100	100	77	73	—	1	6	9	4	2	2	3	12	12
Education	100	100	76	73	—	1	7	7	4	2	3	4	9	13
Public affairs/social services	100	100	77	71	—	4	10	9	1	5	5	3	6	8
Arts and sciences														
Biological sciences	100	100	46	45	—	(2)	35	38	7	2	4	7	9	7
Physical sciences/mathematics	100	100	59	45	—	7	30	36	7	2	2	6	3	5
Psychology	100	100	56	56	—	(2)	27	23	7	4	2	7	7	10
Social sciences	100	100	61	59	—	3	22	24	7	3	4	4	6	7
Humanities	100	100	56	58	—	1	17	19	12	4	5	6	11	12
Other														
Communications	100	100	71	76	—	1	6	6	3	5	7	4	13	8
Miscellaneous	100	100	75	75	—	2	11	10	6	3	3	5	5	5

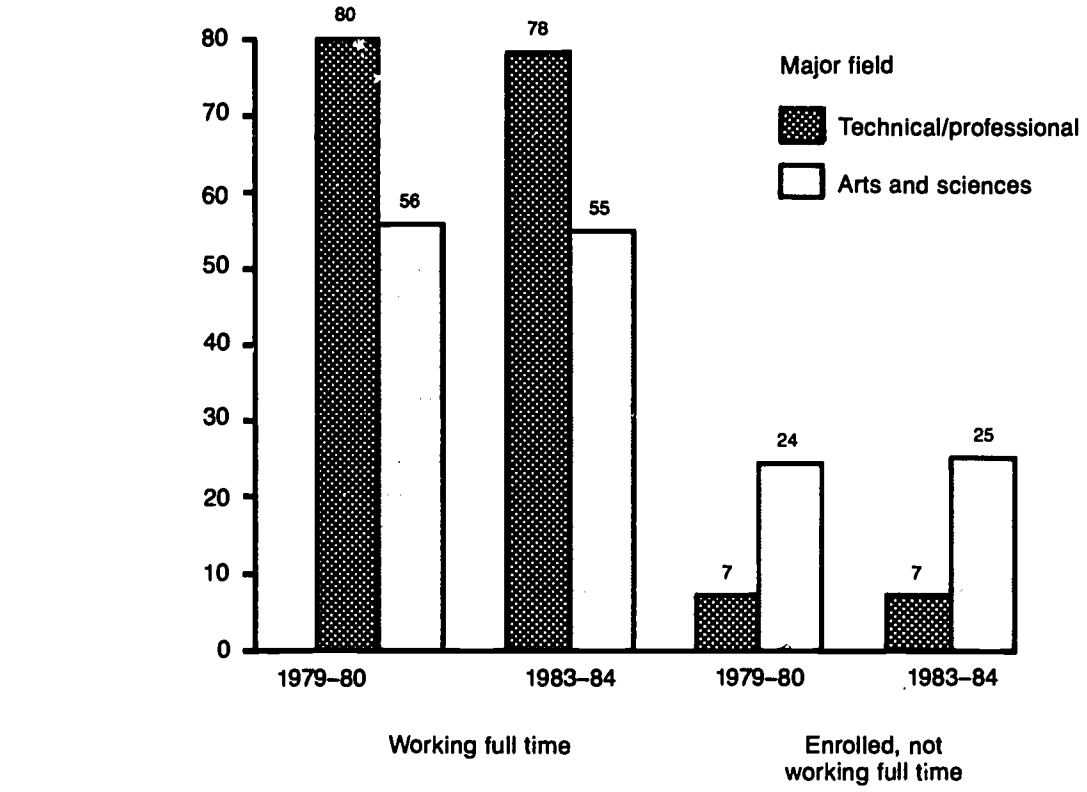
[1]Military included with full-time employed for 1981.

[2]Less than 0.5 percent.

NOTE: Respondents were identified for their primary activity in the order listed. Those included in "enrolled in school," for example, were enrolled but not working full time or serving in the military. See technical note 2:7 in appendix A for additional information.

SOURCE: U.S. Department of Education, Center for Education Statistics, Recent College Graduates Survey, various years, unpublished tabulations.

CHART 2:7—Activities of recent bachelor's degree recipients, by major field and year of graduation: 1979–80 and 1983–84



SOURCE: Center for Education Statistics, Recent College Graduates Surveys, unpublished tabulations.

- Approximately 1 year after obtaining a bachelor's degree, a larger proportion of technical/professional majors was working full time than arts and sciences majors.
- Arts and sciences majors were more often enrolled in school and not working full time than technical/professional majors.
- Graduates in 1980 and 1984 displayed similar patterns of activities.

A. Outcomes: Transitions

Economic outcomes of higher education

It has long been assumed that college graduates enjoy an economic advantage over high school graduates. Recently, however, the view that a college education is always a worthwhile investment in the student's economic future has been questioned. Some critics have argued that the labor market position of college graduates has deteriorated, so that in some cases a college degree is only a marginal investment for the student.[1]

Table 2:8 displays the ratio of the median income[2] for persons with 5 or more years of college, 4 years of college, and 1 to 3 years of college to the median income of high school graduates. (All ratios are for male full-time workers.)[3] Although there are several problems with making straightforward inferences from these data (see technical note 2:8 in appendix A), generally the data presented here support the common assumption that a college degree gives graduates an advantage in the labor market. These data also support the observation that during the 1970's the income of persons who had attended college declined relative to the income of high school graduates. However, the table further shows that in the early 1980's, the income of persons who had attended college *increased* relative to high school graduates' incomes.

Furthermore, the relative economic advantage increases with years of college. For example, in 1985, males with 4 years of college earned 1.38 times the median income of males with only 4 years of high school. Males with 5 or more years of college earned 1.65 times the median income of high school graduates.

Table 2:8 also displays unemployment rates for males in the labor force by educational attainment. Persons with lower education attainment levels tend to have higher unemployment rates. Furthermore, at higher educational levels, the employment rates are more stable. For example, while unemployment for males in the labor force with only a high school diploma increased from 5.5 to 13.6 percent between 1979 and 1983, unemployment increased from 1.9 to 3.6 percent for male college graduates.

[1]Freeman, R. "The Facts about the Declining Economic Value of College," *Journal of Human Resources, 15*(1), 124–142, 1980.

[2]Personal income is limited to money income. See technical note 2:8 for details.

[3]Because of the differences in employment patterns for males and females and for part-time and full-time workers, this indicator has been limited to male full-time workers.

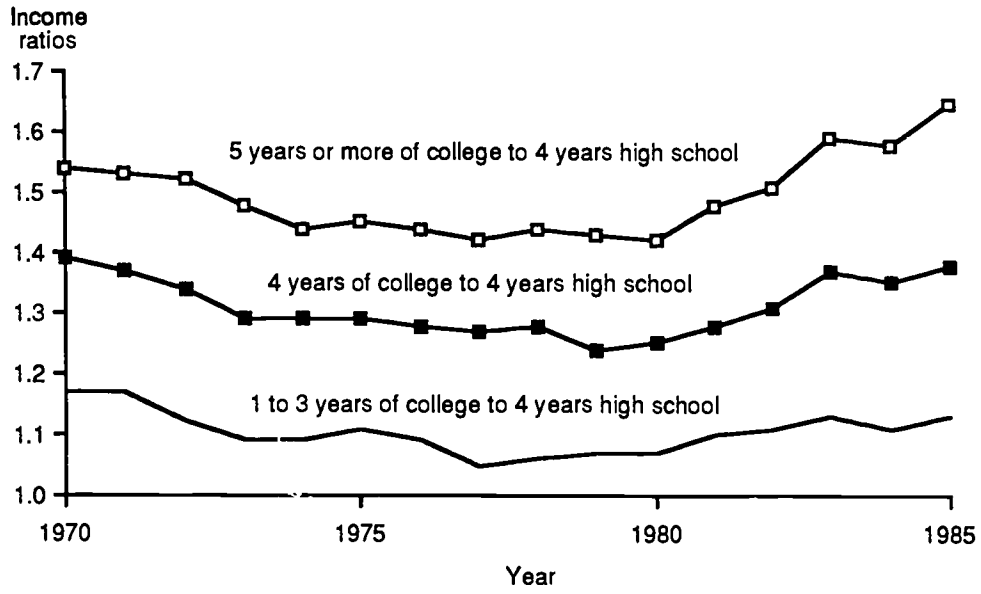
Table 2:8

Median income of full-time male workers with 4 years of high school, ratio of income of full-time male workers by educational attainment, and unemployment rates for males, by educational attainment: 1970–85

Year	Median income: 4 yrs. of high school[3]	Income ratios[1]			Unemployment rate[2]				
		1–3 yrs college to 4 yrs high school	4 yrs college to 4 yrs high school	5 or/+ yrs of college to 4 yrs high school	Total	High school education		College education	
						1–3 yrs	4 yrs	1–3 yrs	4 or/+ yrs
1970	$9,567	1.17	1.39	1.54	3.7	5.6	3.4	3.8	1.3
1971	9,584	1.17	1.37	1.53	5.5	8.0	5.0	5.6	2.0
1972	10,278	1.12	1.34	1.52	5.9	9.7	5.4	4.8	2.2
1973	10,500	1.09	1.29	1.48	4.7	8.4	4.0	3.9	1.8
1974	9,954	1.09	1.29	1.44	4.8	8.9	4.3	3.8	1.8
1975	9,770	1.11	1.29	1.45	9.0	14.7	9.1	6.6	2.5
1976	9,751	1.09	1.28	1.44	7.8	13.5	8.0	6.3	2.4
1977	9,890	1.05	1.27	1.42	7.5	13.4	7.2	5.5	2.8
1978	9,759	1.06	1.28	1.44	6.3	12.1	5.9	4.3	2.2
1979	9,683	1.07	1.24	1.43	5.8	11.9	5.5	4.3	1.9
1980	9,174	1.07	1.25	1.42	6.8	12.8	6.9	5.0	1.8
1981	8,794	1.10	1.28	1.48	8.1	15.6	8.8	5.2	2.1
1982	8,586	1.11	1.31	1.51	10.3	19.4	11.3	7.5	3.2
1983	8,505	1.13	1.37	1.59	11.9	21.4	13.6	9.3	3.6
1984	8,699	1.11	1.35	1.58	8.6	17.6	9.4	5.7	2.8
1985	8,610	1.13	1.38	1.65	7.5	15.9	8.0	5.1	2.6

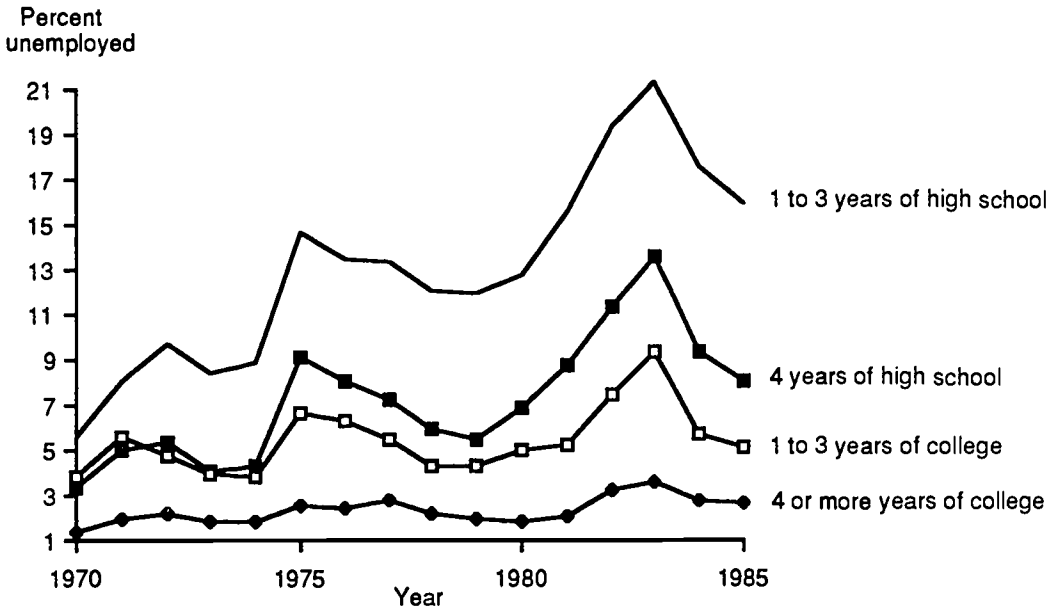
[1]Based on males age 25 and older.
[2]Based on males age 16 and older.
[3]In constant 1970 dollars.
SOURCES: U.S. Department of Commerce, Bureau of the Census, Current Population Reports, Series P-60, *Money Income of Families and Persons in the United States*, various years. U.S. Department of Labor, Bureau of Labor Statistics, *Handbook of Labor Statistics*, Bulletin 2217, 1984 and personal communication.

CHART 2:8A—Income ratios of full-time male workers, by educational attainment



SOURCE: Bureau of the Census, Current Population Reports, Series P-60.

CHART 2:8B—Unemployment rates of males, by educational attainment



SOURCE: Bureau of Labor Statistics, Handbook of Labor Statistics.

- Those who attend college tend to have higher incomes than those whose formal education ended with graduation from high school.
- Attending college decreases the likelihood that an individual will be unemployed.
- These relationships have held through periods of economic growth and recession.

Expenditures per student in institutions of higher education

Policymakers and elected officials must determine the level of resources available to institutions of higher education. One measure of resource availability is the level of expenditures per student, constructed by dividing the sum of institutional expenditures by the number of full-time-equivalent (FTE) students. To compare the purchasing power of expenditures over time, one must adjust this measure for price changes (i.e., express it in constant dollars).

Between fiscal years 1980 and 1985, expenditures per student for all institutions rose 49.1 percent in current dollars, or 2.3 percent in constant dollars. During this period, constant dollar expenditures per student rose at the three types of private institutions, with private doctoral institutions having the greatest increase. Public comprehensive and general baccalaureate institutions showed declines, however. (Data on trends in selected expenditure categories may be found in appendix tables 2:9-1 and 2:9-2.)

Care should be taken in interpreting these data. Different types of institutions have different missions, making comparisons among them difficult. Moreover, not all expenditures benefit students directly, and per student expenditure increases do not ensure that higher quality resources have been purchased or that more learning will take place.

NOTE: Per student expenditures are not the same as the cost to the student of attending college (tuition, room and board), and increases in the latter are not necessarily reflected in increases in per student expenditures.

Table 2:9

Expenditures per full-time-equivalent student in institutions of higher education, by control and type of institution: Fiscal years 1980 and 1985

Control and type of institution	Current dollars			Constant dollars		
	1980[1]	1985	Percent change	1980[2]	1985	Percent change
All institutions[3]	$5,248	$7,827	49.1	$7,652	$7,827	2.3
Public						
Doctoral	7,150	10,610	48.4	10,425	10,610	1.8
Comprehensive	4,183	5,736	37.1	6,099	5,736	−6.0
General baccalaureate	3,797	5,318	40.1	5,536	5,318	−3.9
2-year	2,722	3,984	46.4	3,969	3,984	.4
Private[4]						
Doctoral	11,734	19,297	64.5	17,108	19,297	12.8
Comprehensive	5,028	7,719	53.5	7,331	7,719	5.3
General baccalaureate	4,816	7,557	56.9	7,022	7,557	7.6
2-year	(5)	[5]3,971	(5)	(5)	[5]3,971	(5)

[1]Full-time equivalents for part-time enrollments were estimated.
[2]1980 expenditures were adjusted to 1985 purchasing power using the Higher Education Price Index (HEPI). See glossary for further information.
[3]Included, but not shown separately here, are specialized institutions and a small number of new institutions. See glossary for definitions of institution type.
[4]Includes proprietary institutions.
[5]Comparable data for private 2-year colleges in 1980 are unavailable.

NOTE: Expenditures entail education and general expenditures, including all current funds expenditures except those for auxiliary enterprises, hospitals, and independent operations and their associated mandatory transfers. Data for 1985 were adjusted to make them comparable to 1980 data. For most institutions, the fiscal year corresponds to the school year. For example, fiscal year 1980 corresponds to the academic year of July 1, 1979, through June 30, 1980.

SOURCE: U.S. Department of Education, Center for Education Statistics, special tabulations based on Financial Statistics of Institutions of Higher Education survey, fiscal years 1980 and 1985; and Fall Enrollment in Higher Education survey, fall 1979 and fall 1984.

CHART 2:9A—Current expenditures per student at public and private institutions: 1985

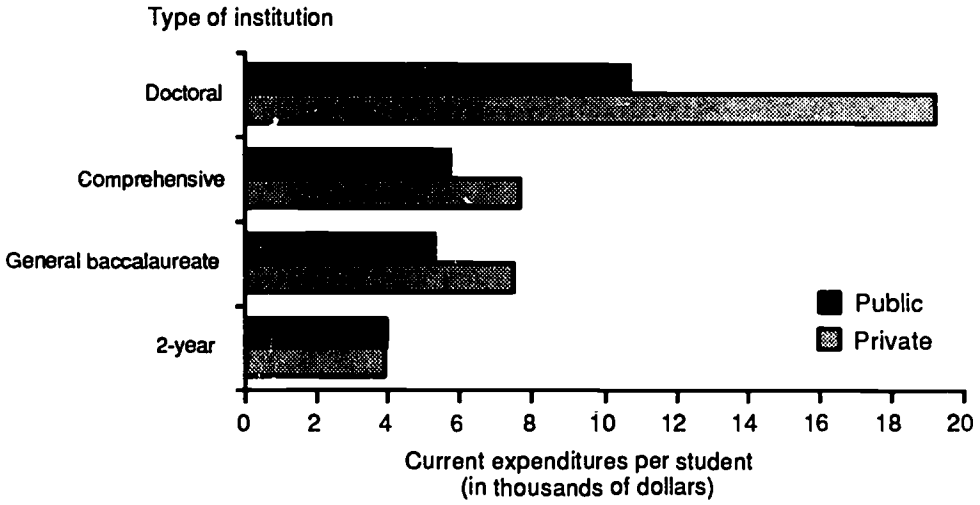
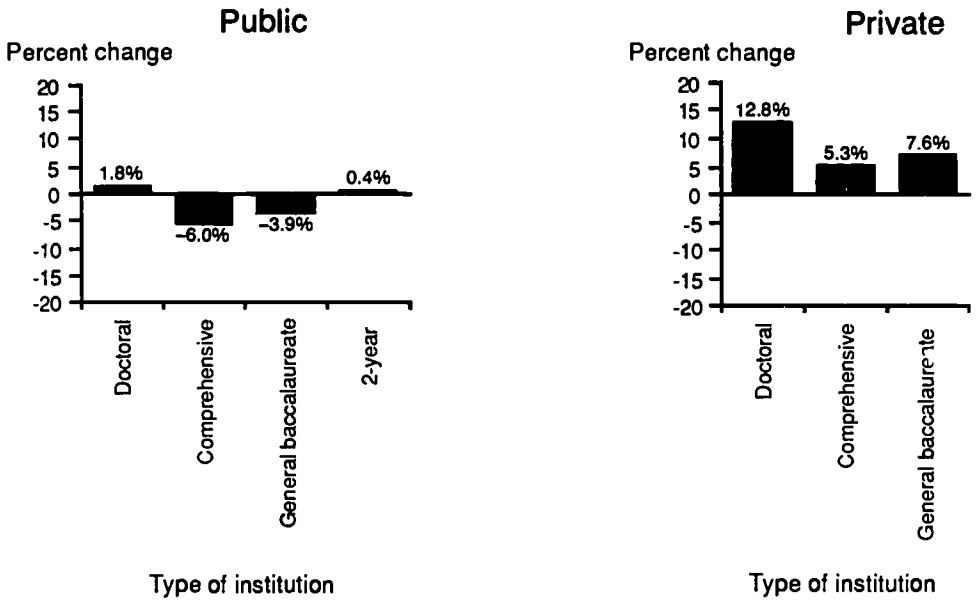


CHART 2:9B—Percent change in expenditures per student: 1980 to 1985

(Constant 1985 dollars)



SOURCE: Center for Education Statistics, unpublished tabulations.

- Expenditures per student are generally higher in private than in public institutions.
- Two-year public and private institutions spent approximately the same amount per student in fiscal 1985.
- During the early 1980's, expenditures per student, when adjusted for inflation, declined in public general baccalaureate and comprehensive institutions and grew in all types of private institutions.

B. Resources: Fiscal Resources

Revenues of higher education institutions

Higher education institutions are maintained through a variety of revenue sources. Enrollments are a particularly important determinant of revenue levels. For private institutions, tuition and fees make up more than half of the total general education revenues and are more than three times as large a share of these revenues as they are for public institutions. For public institutions, State and local allocations as well as revenues from tuition and fees* generally vary with enrollment. Together, these two sources make up over 75 percent of public institutions' total revenues. Tuition and fees have increased in both types of institutions over the fiscal years 1980 to 1985.

State and local government appropriations account for at least 30 times as large a share of general education revenues for public as for private institutions. Federal government grants and contracts are the second largest source of revenues for private institutions and the third largest source for public ones. Private contributions and contracts, as a proportion of general education revenues, are three times as large for private institutions as for public institutions, though the difference is shrinking.

*Federal student financial aid awards are included in the tuition and fee revenue category rather than under government appropriations or grants and contracts.

Table 2:10

General education revenues for institutions of higher education, by control of institution and source of revenue: Selected fiscal years 1976 through 1985

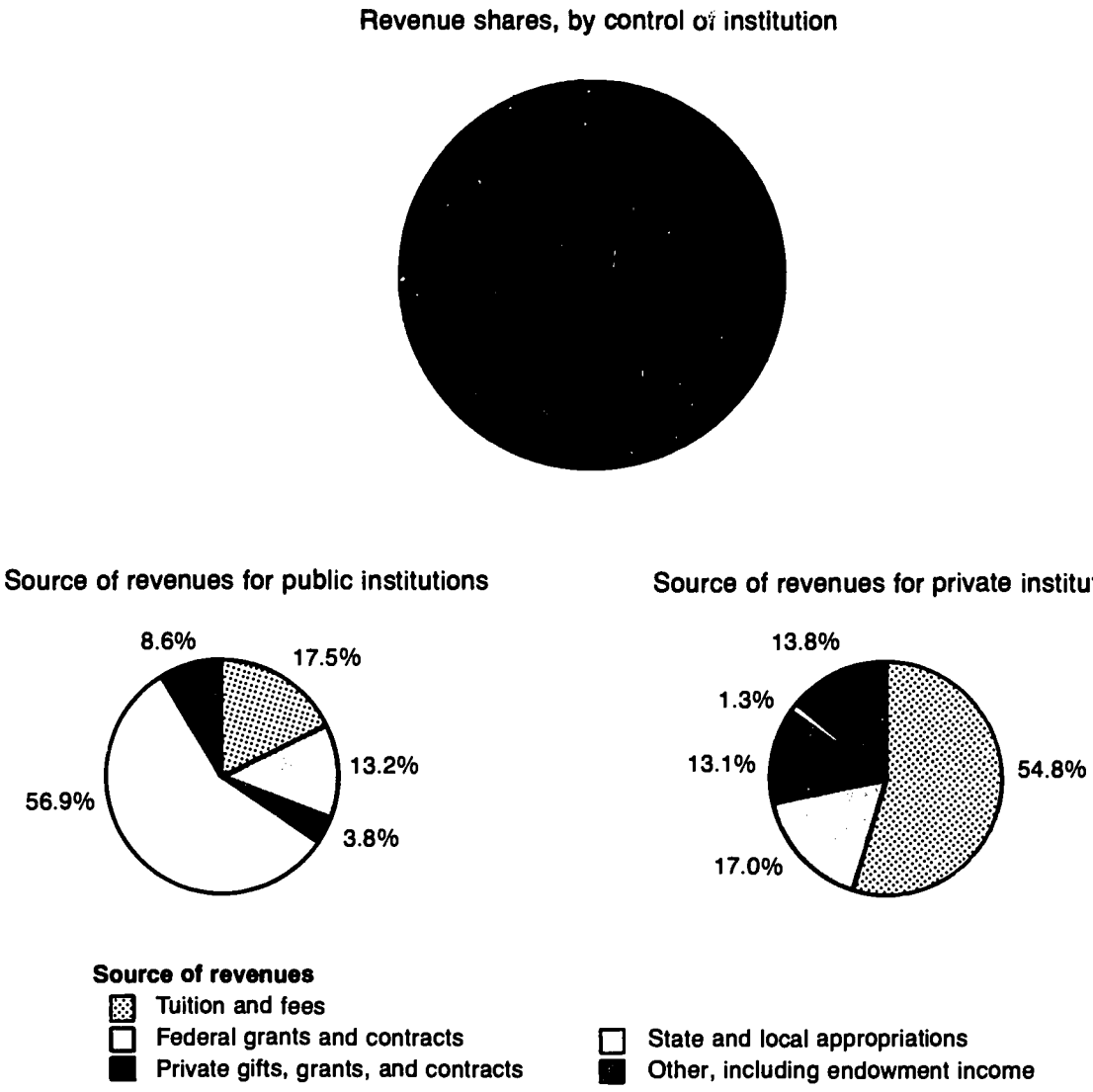
Source of revenue*	All institutions				Public institutions				Private institutions			
	1976	1980	1982	1985	1976	1980	1982	1985	1976	1980	1982	1985
	Amount (in billions)											
Total	$30.7	$44.9	$54.6	$72.2	$21.7	$31.3	$37.4	$49.2	$ 9.0	$13.6	$17.2	$23.0
	Percent											
Total	100	100	100	100	70.6	69.7	68.5	68.1	29.4	30.3	31.5	31.9
Tuition and fees	26.6	26.6	28.9	29.5	16.0	15.5	17.1	17.5	52.0	51.9	54.6	54.8
Government appropriations:												
Federal	3.0	2.7	2.4	2.2	3.6	3.3	2.9	2.9	1.4	1.5	1.2	0.9
State and local	42.8	42.2	41.3	39.3	59.9	59.8	59.5	56.9	1.9	1.7	1.6	1.3
Government grants and contracts:												
Federal	14.7	14.6	12.9	14.3	13.0	12.7	11.2	13.2	18.7	18.8	16.4	17.0
State and local	2.3	2.3	2.2	2.2	2.2	2.3	2.3	2.2	2.7	2.4	2.1	2.2
Private gifts, grants, and contracts	6.2	6.3	6.5	6.8	2.8	3.1	3.4	3.8	14.4	13.4	13.3	13.1
Endowment income	2.2	2.6	2.9	2.9	0.4	0.6	0.7	0.6	6.5	7.2	7.9	7.4
Sales and services of education activities	2.1	2.8	2.9	2.9	2.0	2.6	2.9	2.8	2.5	3.1	3.0	3.0

*Not all revenues accruing to higher education institutions are included here. Excluded from the table are revenues associated with major Federally funded Research and Development Centers, sales and services of auxiliary enterprises and hospitals, and other sources (includes all revenues not covered elsewhere on the survey form). Data for fiscal year 1985 were adjusted to make them comparable to prior years' data.

NOTE: For most institutions, the fiscal year corresponds to the school year; fiscal year 1980 corresponds to school year July 1, 1979 through June 30, 1980. Detail may not add to totals due to rounding.

SOURCE: U.S. Department of Education, Center for Education Statistics, *Digest of Education Statistics, 1987* (based on HEGIS surveys of financial statistics of institutions of higher education, various years).

CHART 2:10—Shares and sources of revenues for public and private institutions of higher education: Fiscal year 1985



SOURCE: Center for Education Statistics, *Digest of Education Statistics, 1987.*

- State and local appropriations are the largest source of funds for public institutions (57 percent) but contribute only slightly more than one percent to private institutions' revenues.
- Private institutions depend on tuition and fees as a source of revenue (55 percent) to about the same extent that public institutions rely on State and local appropriations (57 percent). Tuition and fees are the second largest source of revenues for public institutions (18 percent).
- Private institutions receive a larger share of their revenues from Federal grants and contracts (17 percent) than do public institutions (13 percent).
- Private institutions derive a larger share of income from non-government gifts, grants, and contracts (13 percent) than do public institutions (4 percent).

Federal student financial aid programs and awards

Student financial aid is a primary vehicle for ensuring that capable students are not excluded from a postsecondary education because of financial constraints. Recently, Federally authorized programs have provided approximately 77 percent of student financial aid dollars.* This aid is distributed either through the colleges and universities (campus-based programs) or directly to the student via several mechanisms:

Campus-based programs:
- Supplemental Educational Opportunity Grant (SEOG)
- College Work-Study (CW-S)
- National Direct Student Loan (NDSL)

Programs for direct payment to students:
- Pell Grant
- Guaranteed Student Loan (GSL)

*Washington Office of the College Entrance Examination Board, *Trends in Student Aid: 1980 to 1986* (New York: College Entrance Examination Board, 1986).

Finally, students obtain grants under the State Student Incentive Grants program (SSIG), either through their institution or a State education agency.

The average amounts of aid awarded, as shown below, include matching funds required from institutional sources for the CW-S and NDSL programs, and State matching funds for the SSIG program. Loan amounts associated with the GSL program represent private loan capital made available to students through lending institutions such as banks, and savings and loan associations. (See table 2:11-1 for data on average awards in constant dollars.)

Since aid is available from more than one Federal program, many students may legitimately have financial aid packages larger than the maximum amount of aid allowed from any one program. Similarly, the number of recipients cannot be added to obtain the total number of students receiving aid, because many students receive financial support from more than one Federal aid program.

Table 2:11

Average amounts received in current dollars and number of recipients, by type of Federal postsecondary student aid program: 1973–74 to 1986–87

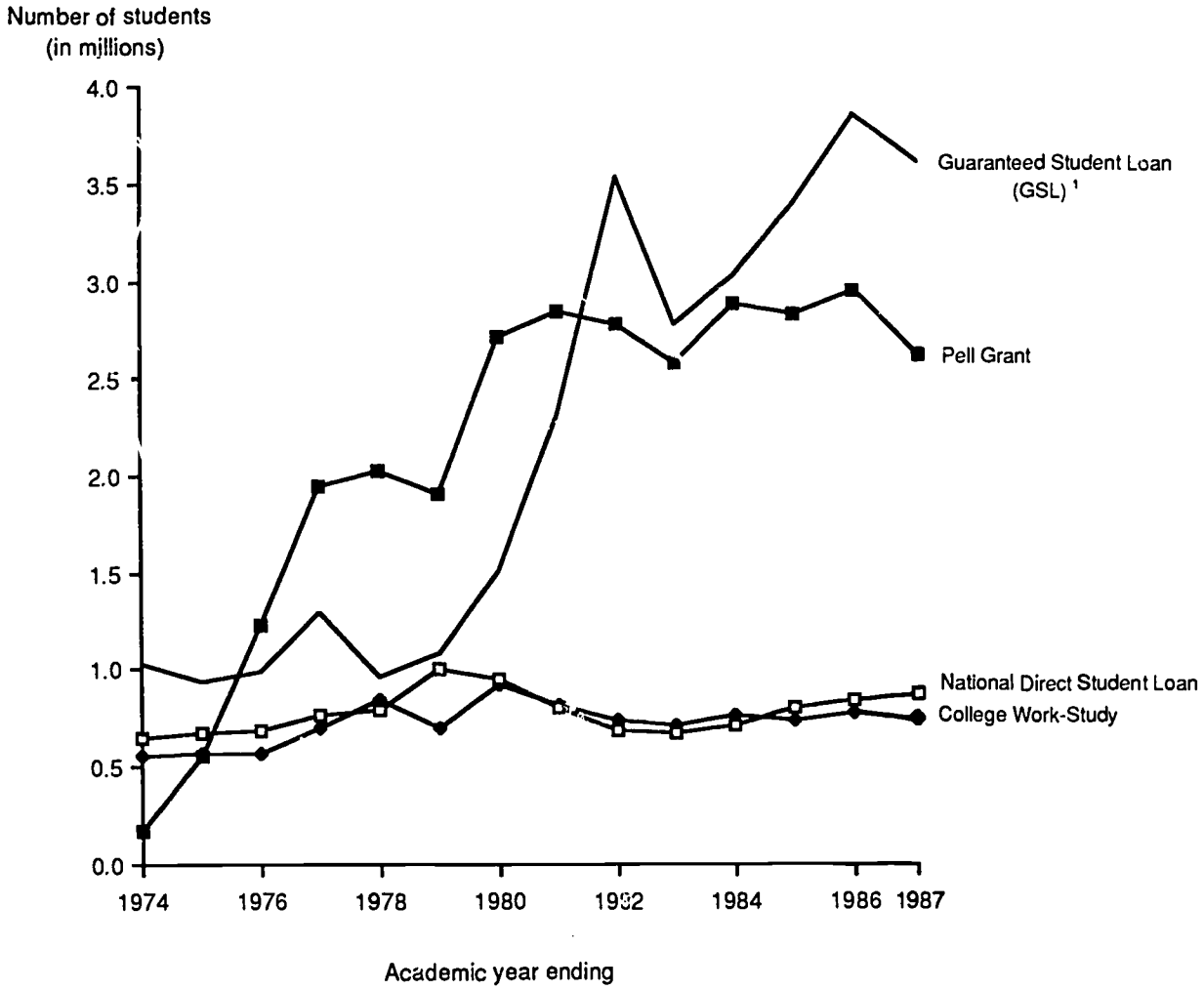
Academic year	Pell Grant	SEOG	CW-S	NDSL	SSIG	GSL	Pell Grant	SEOG	CW-S	NDSL	SSIG	GSL
	Average amounts per recipient						Number of recipients (in thousands)					
1973–74	$270	$571	$532	$661	(1)	$1,137	176	331	556	655	(1)	1,030
1974–75	631	506	518	647	$280	1,215	557	395	570	680	136	938
1975–76	747	513	518	667	492	1,310	1,228	390	570	690	81	991
1976–77	745	543	626	732	552	1,408	1,947	449	697	765	160	1,298
1977–78	746	489	555	773	553	1,580	2,027	499	845	795	217	973
1978–79[2]	805	525	573	792	596	1,805	1,913	510	852	809	214	1,085
1979–80	868	555	650	679	592	1,976	2,716	606	926	958	259	1,510
1980–81	840	513	806	853	558	2,091	2,842	717	819	813	275	2,314
1981–82	827	549	844	848	547	2,210	2,779	659	739	684	281	3,540
1982–83	937	535	854	884	530	2,238	2,579	641	720	675	278	2,788
1983–84	969	557	886	949	598	2,279	2,881	649	772	719	201	3,039
1984–85[2]	1,073	573	877	971	628	2,326	2,830	652	735	697	241	3,403
1985–86[2,3]	1,237	550	880	925	550	2,324	2,907	720	787	857	276	3,823
1986–87[3]	1,330	550	880	925	550	2,375	2,619	689	753	896	264	3,610

[1]The State Student Incentive Grants program had not begun.
[2]Revised from previously published figures.
[3]Data for these years are estimates except for the GSL program.

NOTE: Data for GSL include unsubsidized PLUS loans which began January 1981.

SOURCE: U.S. Department of Education, Office of Postsecondary Education, unpublished tabulations, December 1986.

CHART 2:11—Number of students receiving Federal aid, by program: 1974–87



(1) Includes the PLUS program beginning in 1981.

SOURCE: U.S. Department of Education, Office of Postsecondary Education, unpublished tabulations.

- The two programs experiencing the largest absolute growth in the number of recipients in the last decade are the Pell Grant and GSL programs, which together accounted for 70 percent of all awards in 1986–87.
- The GSL program had a record number of recipients in 1985–86.

Higher education enrollments, by type and control of institution

Higher education institutions may be grouped according to the course of study that they predominantly offer, a 2-year versus a 4-year program, and whether they operate under public or private control. Institutions in each category address somewhat different student needs.

Between 1970 and 1983, enrollments in higher education institutions grew by 45 percent. During this period, the institutions whose enrollments grew the most were the 2-year institutions, which more than doubled their enrollments. This fact suggests, among other things, an increasing interest in higher education by the nontraditional student. Growth of 4-year institutions had been steady over this period (up more than 1.3 million students, a 22 percent increase). Public institutions, which enroll three times as many students as private institutions, increased their enrollments at a faster rate. Since 1983, enrollments at all types of institutions have been relatively steady, but in 1986 enrollments were up slightly from 1985 levels.* (See also Indicator 2:14.)

Enrollments may also be measured in full-time equivalents (FTEs). For private schools, percent changes in FTE enrollments during the 1970's and early 1980's are not considerably different from the actual enrollments presented here. For public 2-year schools, however, the 1970–83 enrollment increase in FTEs was only 85 percent; the actual increase was 112 percent. The difference reflects the large number of students attending part time.

*Enrollment shown for fall 1986 are advance estimates based on a sample of institutions. Enrollments for previous years are based on the entire universe of institutions; universe data for fall 1986 were not available in time for inclusion in this publication.

Table 2:12

Enrollment in institutions of higher education, by type and control: Selected years, 1970–86

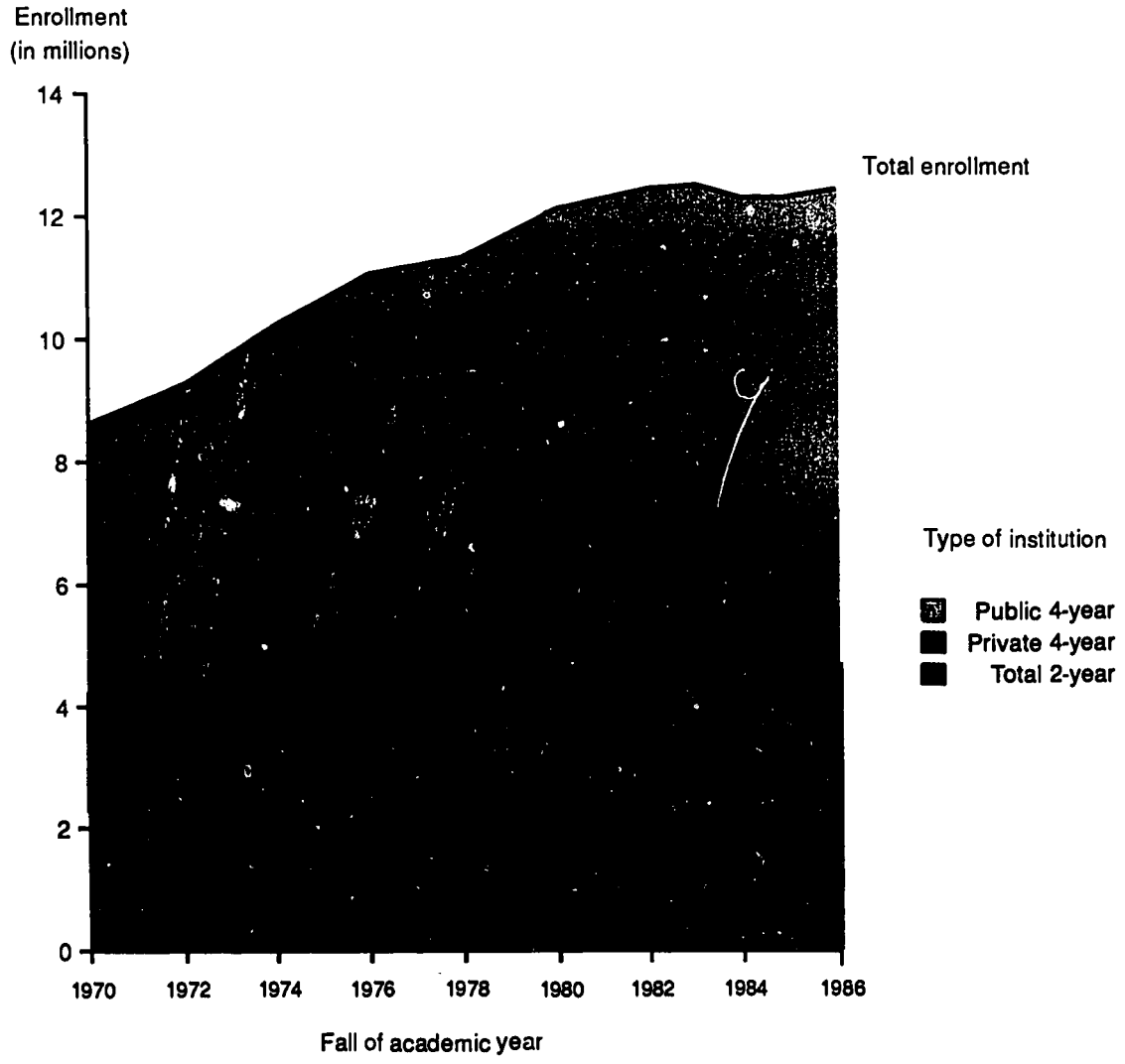
Fall of year	All institutions	Total		Public		Private					
						4-year			2-year		
		Public	Private	4-year	2-year	Total	Nonprofit	Proprietary[1]	Total	Nonprofit	Proprietary[1]
						Enrollment (in thousands)					
1970	8,581	6,428	2,153	4,326	2,102	2,032	—	—	121	—	—
1972	9,215	7,071	2,144	4,430	2,641	2,029	—	—	115	—	—
1974	10,224	7,989	2,235	4,704	3,285	2,117	—	—	119	—	—
1976	11,012	8,653	2,359	4,901	3,752	2,227	2,206	21	132	108	24
1978	11,260	8,786	2,475	4,912	3,874	2,320	2,299	21	155	109	46
1980	12,097	9,457	2,640	5,128	4,329	2,442	2,414	28	197	114	83
1982	12,426	9,696	2,730	5,176	4,520	2,478	2,438	40	252	115	137
1983	12,465	9,683	2,782	5,223	4,459	2,518	2,473	45	264	116	148
1984	12,242	9,477	2,765	5,198	4,279	2,513	2,466	47	251	108	143
1985	12,247	9,479	2,768	5,210	4,270	2,506	2,463	43	262	109	153
1986[2]	12,398	9,600	2,797	5,254	—	2,499	—	—	—	—	—
						Percent change					
1970–1983	45.3	50.6	29.2	20.7	112.5	23.9	—	—	118.2	—	—
1983–1986[3]	−.5	−.9	.5	.6	—	−.8	—	—	—	—	—

—Not available.
[1]Large increases in the number of proprietary schools in 1980 and 1982 reflect the addition of colleges accredited by the National Association of Trade and Technical Schools.
[2]Early estimates based on sample survey.
[3]Differences are not significant at the 0.05 level of confidence.

NOTE: Detail may not add to totals due to rounding.

SOURCES: U.S. Department of Education, Center for Education Statistics, *Digest of Education Statistics, 1987* (based on Higher Education General Information Surveys, various years); *Statistical Highlight*, "Projected Decline in College Enrollments Not Materializing," December 1986; and unpublished data.

CHART 2:12—Trends in enrollments in institutions of higher education by type and control



SOURCE: Center for Education Statistics, *Digest of Education Statistics, 1987,* and *Projected Decline in College Enrollments Not Materializing,* 1986.

- Total enrollment in institutions of higher education increased by nearly 4 million (45 percent) between 1970 and 1983, and declined by an estimated 0.5 percent from 1983 to 1986.
- Between 1970 and 1983, enrollment in 2-year institutions grew by 2.5 million (112 percent).

C. Context: Student Characteristics

Selected characteristics of students in higher education

Over the last decade and a half, the composition of enrollments in the higher education sector has changed, possibly reflecting the changing needs of the labor force and the changing interest in higher education. The traditional college student has been usually thought of as more likely to be male than female, to go to school full-time, and to be between the ages of 18 and 24. In the fall of the 1972–73 school year, this image was matched by the data. More than half of those enrolled in an institution of higher education were male, two-thirds were going full-time, and about three-fourths were under the age of 25. By 1985, however, the majority of those enrolled were women, slightly more than half (58 percent) were going full-time, and over one-third were 25 years old or older.

While the profile of enrollment in institutions of higher education has changed considerably with respect to sex, age, and the proportion of part-time students, the proportion of undergraduate students has not changed substantially during the period.

Table 2:13

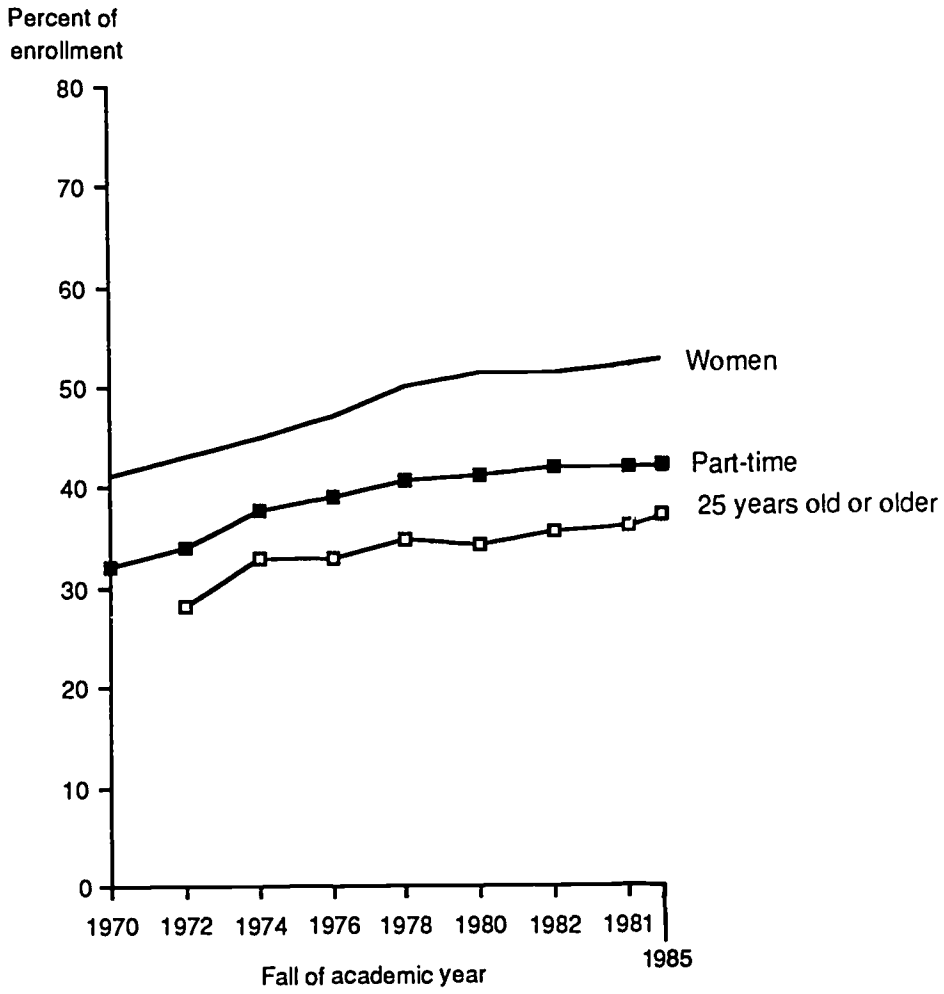
Trends in total enrollment in institutions of higher education, by part-time students, women, students 25 years or older, and graduate or professional students: Fall 1970 to fall 1985

Fall of year	Total enrollment (in thousands)	Part-time students	Women students	Students 25 years or older*	Graduate or professional students
		Percent of total enrollment			
1970	8,581	32.2	41.2	—	14.1
1972	9,215	34.1	43.1	28.0	13.8
1974	10,224	37.7	45.0	32.8	13.9
1976	11,012	39.0	47.2	33.0	14.4
1978	11,260	40.8	49.9	34.8	14.0
1980	12,097	41.3	51.4	34.3	13.4
1984	12,242	42.0	52.1	36.2	13.3
1985	12,247	42.2	52.5	37.7	13.5

—Not available.
*Data on the percentages of students 25 years of age or older come from the Bureau of the Census.

SOURCES: U.S. Department of Education, Center for Education Statistics, *Digest of Education Statistics, 1987* (based on HEGIS surveys of fall enrollment in colleges and universities, various years). U.S. Department of Commerce, Bureau of the Census, Current Population Reports, Series P-20, No. 404, *School Enrollments—Social and Economic Characteristics of Students*, October, various years.

CHART 2:13—Higher education enrollment trends for part-time students, women, and students aged 25 or older: 1970–85



SOURCE: Center for Education Statistics, *Digest of Education Statistics, 1987.* Bureau of the Census, Current Population Reports.

- Between 1970 and 1985, the proportion of part-time students in institutions of higher education increased 10 percentage points, from 32 to 42 percent. The rate of increase slowed substantially during the late 1970's and the 1980's.
- The proportion of women enrolled in institutions of higher education increased by 11 percentage points, from 41 percent to 52 percent, between 1970 and 1985. The rate of increase has slowed in recent years.
- The proportion of postsecondary students in institutions of higher education who were 25 years old or older increased between 1972 and 1985 by 10 percentage points, from 28 to 38 percent.

College enrollment, by selected age groups

College education in the United States has shown enormous growth in the past 40 years. Since 1950, enrollment has increased by over 400 percent, while the number of institutions has increased almost 60 percent.[1] Throughout the last decade, however, many analysts and college administrators expressed concern that the 1980's would be a period of declining enrollment in college education. Some analysts saw in the declining population of 18- to 24-year-olds evidence of coming decreases in enrollment.[2]

Contrary to these predictions, while the 18- to 24-year-old population declined 6.3 percent between 1980 and 1985, total enrollment actually increased[3] 10.0 percent (table 2:14). The enrollment rate for 18- to 24-year-olds, which increased from 25.0 percent in 1980 to 27.8 percent in 1985, was a major factor in expanding college enrollment. While fewer 18- to 24-year-olds were in the general population, a larger percentage of them were choosing to attend college.

[1]U.S. Department of Education. *Digest of Education Statistics, 1985-86.* Washington, DC: U.S. Government Printing Office, 1986.

[2]Crossland, F.E. "Learning to Cope with a Downward Slope." *Change.* July-August 1981; and Carnegie Council on Policy Studies in Higher Education. *Three Thousand Futures.* San Francisco: Josey-Bass, 1980.

[3]The factors which kept higher education enrollments high in the early 1980's may be transitory and the number of 18- to 24-year-olds will continue to decrease. Therefore, a decline in enrollment in the late 1980's and the early 1990's is likely. See Phillip Kaufman, "Trends in Higher Education Enrollment: 1978 to 1985," in U.S. Department of Education, *The Condition of Education, 1986 Edition.* Washington, DC: U.S. Government Printing Office, 1987.

Table 2:14

College enrollment, by selected age groups, and population of 18- to 24-year-olds: 1980–85

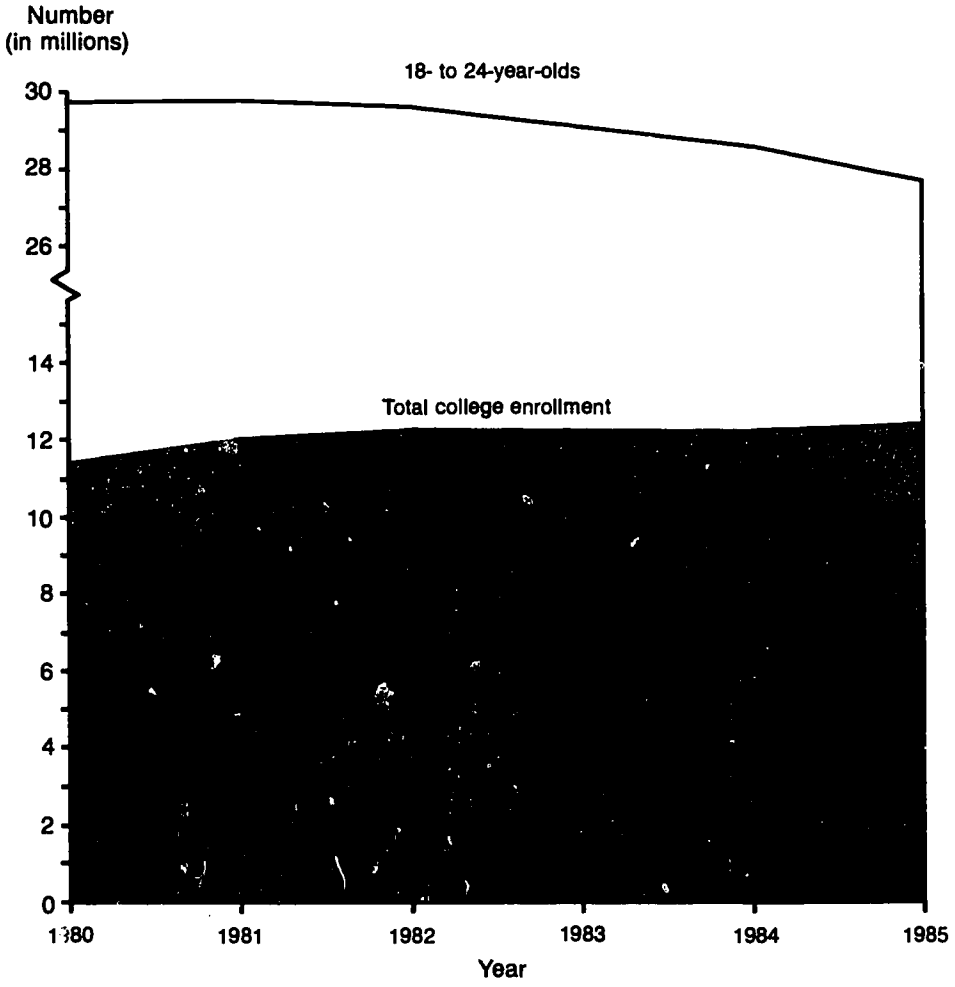
Year	Population 18 to 24 years old	Enrollment, by age group		
		Total*	18 to 24	25 and above
	(in thousands)			
1980	28,957	11,387	7,226	3,910
1981	28,965	12,127	7,575	4,321
1982	28,846	12,308	7,678	4,377
1983	28,580	12,320	7,477	4,583
1984	28,031	12,304	7,591	4,460
1985	27,122	12,524	7,537	4,724

*Total includes a few students between 14 and 17 years old.

SOURCE: U.S. Department of Commerce, Bureau of the Census, Current Population Reports, Population Characteristics, Series P-20. *School Enrollment —Social and Economic Characteristics of Students,* 1984 and 1985.

Another factor contributing to the increase in college enrollment in the early 1980's was increased numbers of older students. (See Indicator 2:13.) In particular, the number of older women attending college increased. This was due to both an increase in the population of women 25 and older and increased enrollment rates for these women. Forty-six percent of the increase in total enrollment between 1980 and 1985 can be attributed solely to the increased attendance of women 25 and older. (Also see Indicator 2:6.)

CHART 2:14—College enrollment, by age and number of 18- to 24-year-olds: 1980–85



SOURCE: Bureau of the Census, Current Population Reports.

* Below age 25 includes a few students 14 to 17.

- Between 1980 and 1985, despite a decrease in the 18- to 24-year-old population, college enrollment increased by 10 percent.
- One factor leading to this increase was a rise in the enrollment rate of 18- to 24-year-olds.
- Another factor was an increase in the number of persons aged 25 and older attending college.

Enrollment patterns in higher education, by race and ethnicity

Americans have prided themselves on having one of the most democratic systems of education in the world. Equal access for all qualified youth has long been a major goal of our education system. One measure of national progress toward that goal is the participation rates[1] of various populations in higher education. This indicator looks at participation rates of whites, blacks, and Hispanics aged 18–24 since 1970.

Black participation rates rose during the first half of the 1970's. Since 1976, black participation rates have edged downward.[2] Nevertheless, black participation was higher in 1985 than in 1970. Throughout the period, participation rates of blacks and Hispanics were lower than those of whites.

Another way of measuring equal access is to examine the racial/ethnic composition of students attending institutions of higher education.[3] As shown in appendix table 2:15-1, students of both 4-year and 2-year institutions became increasingly diverse between 1976 and 1984. The percentage of white students dropped, from about 83 percent of all students in 1976 to 80 percent in 1984. The percentage of black students also declined slightly, but the proportions of other minority groups (except American Indians) and nonresident aliens increased.

[1]Participation rates represent the proportion of a given subgroup who are enrolled in an institution of higher education. For example, the participation rate for 18- to 24-year-old blacks is calculated as 18- to 24-year-old black college students as a percent of all black 18- to 24-year-olds.
[2]This trend is statistically significant at the 0.90 level but not at the 0.95 level.
[3]The racial/ethnic composition of college students depicts what proportion of all college students come from various racial/ethnic groups. Thus, white students represented 80 percent of all students in 1980. Trends in racial composition and participation rates may not be consistent because of differences over time in the relative sizes of the racial/ethnic groups.

Table 2:15

Participation rates of 18- to 24-year-olds in higher education by race/ethnicity: 1970 to 1985

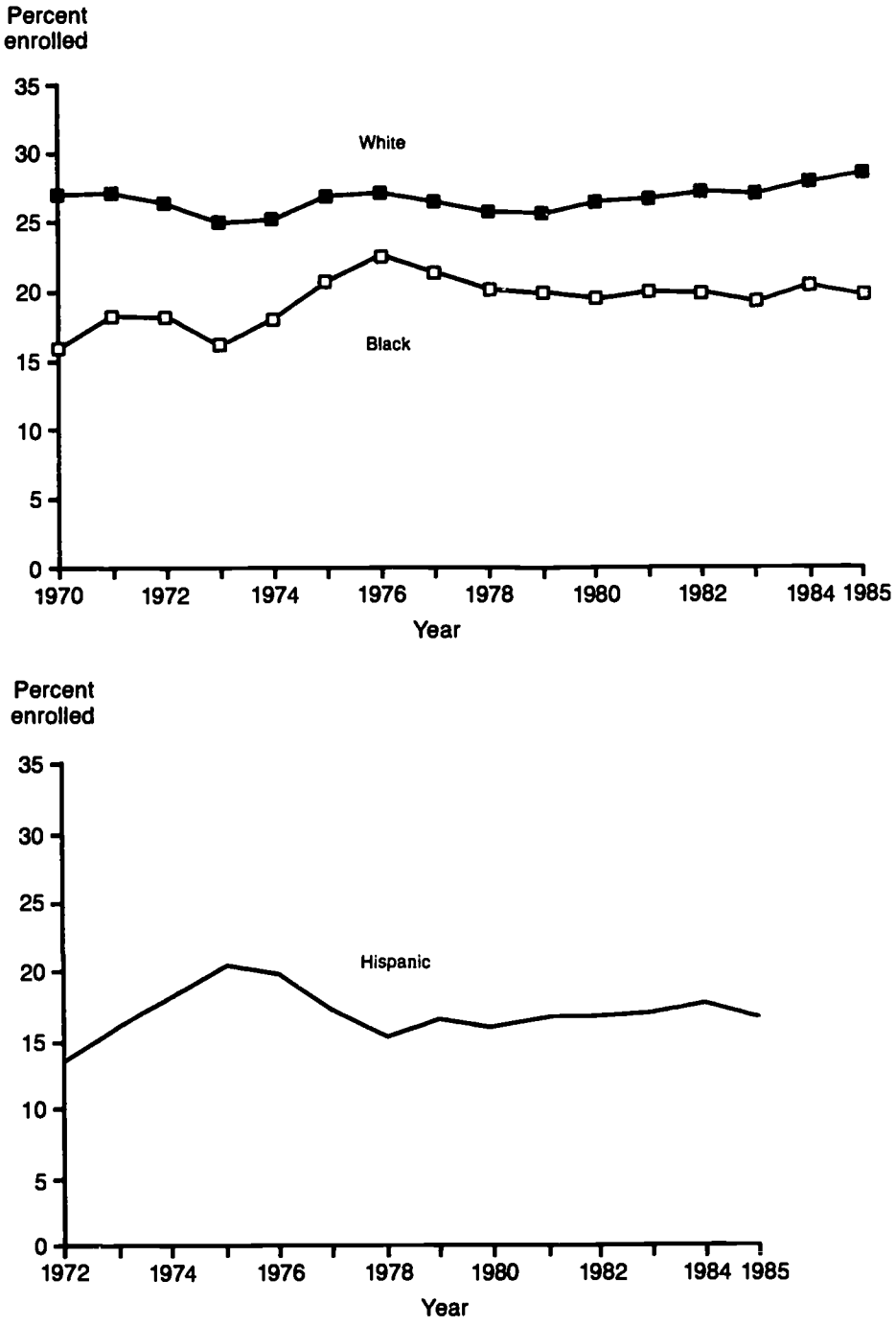
Year	Racial/ethnic group		
	White	Black	Hispanic*
	Percent enrolled		
1970	27.1	15.8	—
1971	27.2	18.2	—
1972	26.4	18.1	13.4
1973	25.0	16.0	16.0
1974	25.2	17.9	18.1
1975	26.9	20.7	20.4
1976	27.1	22.6	19.9
1977	26.5	21.3	17.2
1978	25.7	20.1	15.2
1979	25.6	19.8	16.6
1980	26.4	19.4	16.1
1981	26.7	19.9	16.7
1982	27.2	19.8	16.8
1983	27.0	19.2	17.2
1984	28.0	20.4	17.9
1985	28.7	19.7	16.9

Hispanic*

*Hispanics may be of any race.
—Not available.

SOURCE: U.S. Department of Commerce, Bureau of the Census, Current Population Reports, *School Environments—Social and Economic Characteristics of Students:* October (Series P-20), various years

CHART 2:15—Trends in education participation rates of 18- to 24-year-olds, by race/ethnicity



SOURCE: Bureau of the Census, Current Population Reports, P-20.

- Among 18- to 24-year-olds, participation rates for blacks and Hispanics are below those of whites.
- The proportion of blacks 18 to 24 years old enrolled in higher education increased in the early 1970's. Despite some evidence of a downward trend after 1976, black participation rates in 1985 were higher than they were in 1970.

Section III. Appendices for Education Indicators

Appendix A. Supplementary Tables

Table 1:1-1

Average reading performance of 9-, 13-, and 17-year-old students, by selected characteristics: 1971 to 1984

	Average reading proficiency scale scores			
9-year-olds	1971	1975	1980	1984
Total	207.2	209.6	213.5	213.2
Sex				
Male	201.2	204.2	208.5	210.0
Female	213.3	215.1	218.5	216.3
Observed ethnicity/race				
White[1]	214.4	215.9	219.7	220.1
Black	169.3	181.9	188.9	188.4
Hispanic	—	[2]182.9	[2]189.1	[2]193.0
Region				
Northeast	—	214.2	219.6	217.1
Southeast	—	200.8	208.9	207.2
Central	—	215.1	215.1	217.2
West	—	206.5	211.0	211.4
Parental education				
Not graduated high school	188.6	189.9	193.0	197.1
Graduated high school	209.0	211.2	211.7	211.4
Post high school	224.7	221.1	224.9	224.3
Size/type of community				
Rural	[2]200.7	[2]204.0	[2]210.3	[2]205.8
Disadvantaged urban	177.8	185.1	186.0	194.4
Advantaged urban	231.3	226.2	[2]231.9	231.4
Reading materials in the home				
0–2 items	188.6	195.8	199.3	201.0
3 items	208.0	211.5	214.7	217.3
4 items	220.2	222.2	224.6	225.9
Television watched per day				
0–2 hours	—	—	217.4	219.6
3–5 hours	—	—	220.0	219.8
6 hours or more	—	—	208.8	202.2
13-year-olds	1971	1975	1980	1984
Total	253.9	254.8	257.4	257.8
Sex				
Male	247.9	248.4	252.8	253.5
Female	259.9	261.2	261.8	262.3
Observed ethnicity/race				
White[1]	260.1	260.9	263.1	263.4
Black	220.3	224.4	231.9	236.8
Hispanic	—	[2]231.1	[2]236.0	[2]239.2
Region				
Northeast	—	257.6	258.9	261.0
Southeast	—	248.2	251.9	257.0
Central	—	260.3	263.4	259.3
West	—	252.0	254.9	254.5
Parental education				
Not graduated high school	236.2	237.5	237.4	241.5
Graduated high school	255.4	253.4	252.8	253.8
Post high school	269.7	268.9	269.7	268.4

Table 1:1-1

Average reading performance of 9-, 13, and 17-year-old students by selected characteristics, continued

	Reading proficiency means			
13-year-olds, continued	1971	1975	1980	1984
Size/type of community				
Rural	[2]245.0	[2]247.9	[2]254.3	[2]255.5
Disadvantaged urban	[2]232.4	[2]229.1	[2]241.6	[2]239.6
Advantaged urban	[2]272.4	[2]271.5	[2]275.2	[2]274.7
Reading materials in the home				
0–2 items	227.7	232.9	239.2	241.2
3 items	248.7	248.7	253.0	255.8
4 items	263.9	265.3	265.4	265.5
Television watched per day				
0–2 hours	—	—	261.3	266.8
3–5 hours	—	—	256.4	261.9
6 hours or more	—	—	243.8	246.2
Time spent on homework				
None was assigned —	—	—	253.3	255.4
Did not do it	—	—	250.7	247.9
Less than 1 hour	—	—	258.4	260.9
1 to 2 hours	—	—	262.5	265.3
More than 2 hours	—	—	259.4	262.8
17-year-olds	1971	1975	1980	1984
Total	284.3	284.5	284.5	288.2
Sex				
Male	278.1	279.2	281.1	283.4
Female	290.3	289.6	287.9	293.1
Observed ethnicity/race				
White[1]	290.4	290.7	291.0	294.6
Black	240.6	244.0	246.1	263.5
Hispanic	—	[2]254.7	[2]261.7	[2]268.7
Region				
Northeast	—	287.4	284.0	290.8
Southeast	—	276.7	280.3	284.3
Central	—	290.0	287.2	289.2
West	—	281.1	285.1	288.7
Parental education				
Not graduated high school	263.4	264.1	263.2	269.5
Graduated high school	282.9	280.6	276.9	280.6
Post high school	300.9	297.7	296.5	300.0
Size/type of community				
Rural	[2]275.8	[2]281.3	[2]278.1	[2]282.8
Disadvantaged urban	[2]259.4	[2]261.0	[2]258.3	[2]265.9
Advantaged urban	[2]303.5	301.2	[2]299.1	300.8
Reading materials in the home				
0–2 items	252.3	257.2	264.5	266.7
3 items	274.9	276.2	279.4	283.4
4 items	292.4	292.6	291.3	294.7
Television watched per day				
0–2 hours	—	—	288.2	295.3
3–5 hours	—	—	278.2	284.4
6 hours or more	—	—	263.7	270.1

Table 1:1-1

Average reading performance of 9-, 13-, and 17-year-old students by selected characteristics, continued

	Reading proficiency means			
17-year-olds, continued	1971	1975	1980	1984
Time spent on homework				
None was assigned	—	—	277.1	278.0
Did not do it	—	—	286.5	287.8
Less than 1 hour	—	—	287.2	289.1
1 to 2 hours	—	—	288.3	293.3
More than 2 hours	—	—	292.2	299.0

—Not available.
[1] Includes Hispanic in 1971.
[2] Interpret with caution. Standard errors are poorly estimated due to small sample size.
SOURCE: National Assessment of Educational Progress, *The Reading Report Card, Progress Toward Excellence in Our Schools (Report 15-R-01)*, 1985.

Table 1:1-2

Standard errors for percentage of 9-, 13-, and 17-year-old students at or above each of the five reading proficiency levels: 1971 to 1984 (table 1:1)

Reading level	Age	1971	1975	1980	1984
Rudimentary (150)	9	0.5	0.3	0.4	0.4
	13	0.1	0.1	0.0	0.0
	17	—	—	—	—
Basic (200)	9	1.1	0.8	1.0	0.9
	13	0.5	0.4	0.5	0.3
	17	0.3	0.2	0.3	0.1
Intermediate (250)	9	0.6	0.4	0.8	0.6
	13	1.3	1.0	1.1	0.8
	17	0.9	0.6	0.9	0.7
Adept (300)	9	0.1	0.1	0.1	0.1
	13	0.5	0.4	0.5	0.4
	17	1.1	0.7	1.2	0.8
Advanced (350)	9	—	—	—	—
	13	—	—	—	—
	17	0.3	0.2	0.3	0.2

—Standard errors not reported when the proportion of students is either greater than 95 percent or less than 5 percent.

SOURCE: National Assessment of Educational Progress, *The Reading Report Card, Progress Toward Excellence in Our Schools* (Report No. 15–R–01), 1985.

Table 1:1-3

Standard errors for average reading performance of 9-, 13-, and 17-year-old students, by selected characteristics: 1971 to 1984 (table 1:1-1)

9-year-olds	1971	1975	1980	1984
Total	1.1	0.7	1.1	0.9
Sex				
Male	1.2	0.9	1.2	1.0
Female	1.2	0.8	1.1	0.9
Observed ethnicity/race				
White[1]	1.1	0.7	0.9	0.8
Black	1.8	1.2	1.4	1.1
Hispanic	—	[2]2.2	[2]2.1	[2]1.3
Region				
Northeast	—	1.3	2.3	1.9
Southeast	—	1.1	2.2	2.2
Central	—	1.2	1.4	1.5
West	—	2.0	2.0	1.7
Parental education				
Not graduated high school	1.3	1.1	1.4	1.3
Graduated high school	1.2	0.8	1.2	1.0
Post high school	1.4	0.9	1.1	1.1
Size/type of communtiy				
Rural	[2]3.2	[2]2.3	[2]1.6	[2]2.7
Disadvantaged urban	2.9	2.5	1.9	1.7
Advantaged urban	1.9	1.6	[2]1.7	1.4
Reading materials in the home				
0–2 items	1.2	0.9	1.2	0.8
3 items	1.1	0.7	1.0	0.9
4 items	1.0	0.7	1.0	1.0
Television watched per day				
0–2 hours	—	—	1.1	1.2
3–5 hours	—	—	0.8	0.9
6 hours or more	—	—	1.0	1.0

Table 1:1-3

Standard errors for average reading performance of 9-, 13-, and 17-year-old students, by selected characteristics: 1971 to 1984, continued

13-year-olds	1971	1975	1980	1984
Total	1.1	0.8	0.9	0.6
Sex				
Male	1.1	0.8	1.1	0.7
Female	1.1	0.9	0.9	0.7
Observed ethnicity/race				
White[1]	0.9	0.7	0.7	0.5
Black	1.3	1.2	1.4	1.1
Hispanic	—	[2]3.0	[2]2.3	[2]1.7
Region				
Northeast	—	1.8	1.7	0.6
Southeast	—	1.5	1.7	1.6
Central	—	1.3	1.7	1.1
West	—	1.5	2.1	1.4
Parental education				
Not graduated high school	1.3	1.2	1.3	1.0
Graduated high school	0.8	0.7	0.8	0.7
Post high school	1.0	0.7	0.8	0.7
Size/type of community				
Rural	[2]2.4	[2]1.9	[2]2.3	[2]1.6
Disadvantaged urban	[2]2.6	[2]2.7	[2]3.9	[2]2.0
Advantaged urban	[2]1.8	[2]1.3	[2]1.5	[2]1.9
Reading material in the home				
0–2 items	1.4	1.2	1.5	1.0
3 items	1.0	0.8	1.0	0.7
4 items	0.9	0.7	0.7	0.6
Television watched per day				
0–2 hours	—	—	0.9	0.8
3–5 hours	—	—	1.0	0.6
6 hours or more	—	—	1.3	0.8
Time spent on homework				
None was assigned	—	—	1.2	0.9
Did not do it	—	—	1.6	2.0
Less than 1 hour	—	—	1.0	0.7
1 to 2 hours	—	—	1.1	0.8
More than 2 hours	—	—	1.7	1.1

Table 1:1-3

Standard errors for average reading performance of 9-, 13-, and 17-year-old students, by selected characteristics: 1971 to 1984, continued

17-year-olds	1971	1975	1980	1984
Total	1.2	0.7	1.1	0.9
Sex				
Male	1.2	0.8	1.2	0.9
Female	1.3	0.8	1.2	1.0
Observed ethnicity/race				
White[1]	1.0	0.6	0.9	0.7
Black	1.6	1.7	1.8	1.2
Hispanic	—	[2]2.9	[2]2.6	[2]1.9
Region				
Northeast	—	1.5	1.8	1.9
Southeast	—	1.3	2.6	2.0
Central	—	1.3	2.3	1.5
West	—	1.6	1.7	1.6
Parental education				
Not graduated high school	1.4	1.0	1.5	1.3
Graduated high school	1.0	0.9	0.9	0.9
Post high school	1.1	0.6	1.0	0.8
Size/type of community				
Rural	[2]3.1	[2]2.3	[2]3.7	[2]2.7
Disadvantaged urban	[2]2.6	[2]3.6	[2]2.7	[2]2.1
Advantaged urban	[2]2.0	1.3	[2]1.6	1.9
Reading material in the home				
0–2 items	1.8	1.7	1.9	1.4
3 items	1.4	0.9	1.5	1.1
4 items	1.0	0.6	1.0	0.7
Television watched per day				
0–2 hours	—	—	1.1	0.8
3–5 hours	—	—	1.1	0.9
6 hours or more	—	—	2.2	1.3
Time spent on homework				
None was assigned	—	—	1.2	1.0
Did not do it	—	—	1.4	1.2
Less than 1 hour	—	—	1.6	1.0
1 to 2 hours	—	—	1.3	1.0
More than 2 hours	—	—	2.2	1.2

—Not available.
[1] includes Hispanic in 1971.
[2] Interpret with caution. Standard errors are poorly estimated due to small sample size.

SOURCE: National Assessment of Educational Progress, *The Reading Report Card, Progress Toward Excellence in Our Schools* (Report 15-R-01), 1985.

Table 1:2-1

Average science performance of 9-, 13-, and 17-year-old students, by selected characteristics: 1970 to 1982

	Average percentage of correct responses and percentage point change								
9-year-olds[1]	1970	1973	Change	1973	1977	Change			
Total	61.0	59.8	−1.2	52.3	52.2	−0.1			
Sex									
Male	62.1	60.8	−1.3	53.6	53.5	−0.1			
Female	59.9	58.8	−1.1	51.0	50.8	−0.2			
Race									
White	64.0	62.8	−1.2	55.0	54.6	−0.4			
Black	46.8	46.2	−0.6	39.8	39.4	−0.4			
Region									
Northeast	63.6	61.6	−2.0	53.6	54.3	0.7			
Southeast	55.2	55.5	0.3	48.5	48.0	−0.5			
Central	62.7	61.4	−1.3	53.9	53.3	−0.6			
West	61.4	60.1	−1.3	52.7	52.6	−0.1			
Parental education									
Not graduated high school	54.1	54.6	0.5	47.1	45.8	−1.3			
Graduated high school	61.5	60.5	−1.0	53.0	53.3	0.3			
Post high school	66.9	65.2	−1.7	57.5	56.7	−0.8			
Size and type of community									
Rural	57.3	57.2	−0.1	52.2	52.3	0.1			
Disadvantaged urban	45.8	46.4	0.6	50.1	52.9	2.8			
Advantaged urban	69.1	66.4	−2.7	40.3	41.0	0.7			
Main big city	57.4	56.3	−1.1	58.0	59.5	1.5			
Urban fringe	65.1	62.6	−2.5	46.7	47.6	−1.1			
Medium city	62.2	61.1	−1.1	54.8	56.4	1.6			
Small places	60.9	59.8	−1.1	54.8	51.5	−3.3			
13-year-olds	1970	1973	Change	1973	1977	Change	1977	1982	Change
Total	60.2	58.5	−1.7	54.5	53.8	−0.7	52.8	52.4	−0.4
Sex									
Male	62.2	60.6	−1.7	56.3	56.1	−0.2	54.4	54.7	0.3
Female	58.3	56.4	−1.9	52.7	51.6	−1.1	51.2	50.2	−1.0
Race									
White	63.3	61.8	−1.5	57.2	56.4	−0.8	—	—	—
Black	45.0	41.9	−3.1	41.1	42.0	0.9	—	—	—
Region									
Northeast	52.3	60.5	−1.8	56.0	55.9	−0.1	55.0	53.3	−1.7
Southeast	55.8	55.3	−0.5	51.8	51.1	−0.7	49.6	49.0	−0.6
Central	62.4	60.3	−2.1	56.0	55.4	−0.6	54.4	54.1	−0.3
West	60.0	57.7	−2.3	54.1	52.4	−1.7	51.8	52.5	0.7
Parental education									
Not graduated high school	52.8	51.4	−1.4	48.6	47.6	−1.0	—	—	—
Graduated high school	58.9	58.2	−0.7	54.3	53.2	−1.1	—	—	—
Post high school	66.2	64.8	−1.4	59.7	58.7	−1.0	—	—	—
Size and type of community									
Rural	55.9	56.5	0.6	55.1	54.0	−1.1	—	—	—
Disadvantaged urban	48.3	45.4	−2.9	52.6	53.4	0.8	—	—	—
Advantaged urban	66.6	65.3	−1.3	43.8	42.2	−1.6	—	—	—
Main big city	56.7	54.7	−2.0	59.9	59.4	−0.5	—	—	—
Urban fringe	63.3	60.5	−2.8	51.4	50.6	−0.8	—	—	—
Medium city	61.0	58.8	−2.2	56.0	56.3	0.3	—	—	—
Small places	60.2	58.6	−1.6	54.6	53.7	−0.9	—	—	—

Table 1:2-1

Average science performance of 9-, 13-, and 17-year-old students, by selected characteristics: 1970 to 1982, continued

	Reading proficiency means								
	Average percentage of correct responses and percentage point change								
17-year-olds	1970	1973	Change	1973	1977	Change	1977	1982	Change
Total	45.2	42.5	−2.8	48.4	46.5	−1.9	61.7	59.7	−2.0
Sex									
Male	48.2	45.3	−2.9	51.9	49.7	−2.2	64.9	62.7	−2.2
Female	42.3	39.8	−2.5	45.1	43.3	−1.8	58.6	56.9	−1.7
Race									
White	46.8	44.4	−2.4	50.6	48.7	−1.9	—	—	—
Black	34.1	32.1	−2.0	35.8	33.0	−2.8	—	—	—
Region									
Northeast	47.1	44.1	-3.0	49.4	48.8	−0.8	64.2	60.1	−4.1
Southeast	42.0	40.9	-1.1	46.3	44.3	−2.0	57.4	57.3	−0.1
Central	45.5	43.1	-2.4	49.4	47.7	−1.7	62.8	61.9	−0.9
West	45.4	41.4	-4.0	48.0	45.5	−2.5	61.1	58.7	−2.4
Parental education									
Not graduated high school	39.5	36.2	−3.3	41.8	39.6	−2.2	—	—	—
Graduated high school	44.1	41.1	−3.0	46.7	44.5	−2.2	—	—	—
Post high school	49.4	46.7	−2.7	53.1	51.1	−2.0	—	—	—
Size and type of community									
Rural	42.3	41.1	−1.2	49.2	46.9	−2.3	—	—	—
Disadvantaged urban	40.1	35.2	−4.9	47.6	46.2	−1.4	—	—	—
Advantaged urban	51.1	46.9	−4.2	40.3	36.4	−3.9	—	—	—
Main big city	43.4	39.2	−4.2	53.1	50.9	−2.2	—	—	—
Urban fringe	47.3	43.8	−3.5	44.8	42.1	−2.7	—	—	—
Medium city	45.9	42.4	−3.5	49.5	49.0	−0.5	—	—	—
Small places	44.7	43.0	−1.7	48.3	46.7	−1.6	—	—	—

—Not available.
[1]Data from the Science Assessment and Research Project are not included for 9-year-olds because change for total content items was not reported.
NOTE: The mean change is equal to the difference in the mean correct for each year, but may differ in this table due to rounding.
SOURCE: National Assessment of Educational Progress, *Three National Assessments of Science, 1969–77: Changes in Achievement,* 1978 (Center for Education Statistics, special tabulations). Science Assessment and Research Project, *Images of Science,* 1983.

Table 1:2-2

Standard errors for average mathematics and science performance of 9-, 13-, and 17-year-old students: 1970 to 1982 (table 1:2)

Age and subject									
Mathematics	1973	1978	Change	1978	1982	Change			
9	—	—	0.7	—	—	(1)			
13	—	—	1.0	—	—	(2)			
17	—	—	0.7	—	—	(1)			
Science	1970	1973	Change	1973	1977	Change	1977	1982	Change
9	0.4	0.4	0.6	0.4	0.4	0.6	(3)	(3)	(3)
13	0.4	0.5	0.6	0.4	0.4	0.6	—	—	0.8
17	0.3	0.3	0.5	0.4	0.4	0.6	—	—	0.8

—Standard error not available.
[1]Standard error not available; change not significant at 95 percent level.
[2]Standard error not available; change significant at 95 percent level.
[3]Data from the Science Assessment and Research Project for the 1982 science assessment are not included for 9-year-olds because change for total content items was not reported.

SOURCE: National Assessment of Educational Progress. *The Third National Mathematics Assessment: Results, Trends and Issues* (Report No. 13-MA-01), 1983. *Three National Assessments of Science: Changes in Achievement*, 1969–77 (Report No. 08-S-00), 1978. Science Assessment and Research Project, *Images of Science, A Summary of Results from the 1981–82 National Assessment in Science*, 1983.

Table 1:2-3

Standard errors for average science performance of 9-, 13-, and 17-year-old students, by selected characteristics: 1970 to 1982 (table 1:2-1)

9-year-olds[1]	1970	1973	Change	1973	1977	Change
Total	0.4	0.4	0.6	0.4	0.4	0.6
Sex						
Male	0.2	0.2	0.2	0.2	0.2	0.2
Female	0.2	0.1	0.2	0.2	0.2	0.2
Race						
White	0.2	0.3	0.4	0.2	0.3	0.4
Black	0.7	0.6	0.9	0.6	0.7	0.9
Region						
Northeast	0.5	0.6	0.8	0.6	0.6	0.9
Southeast	0.7	0.9	1.1	0.8	0.9	1.1
Central	0.6	0.8	1.0	0.7	0.8	1.1
West	0.7	0.8	1.0	0.7	0.7	1.0
Parental education						
Not graduated high school	0.6	0.5	0.8	0.5	0.6	0.8
Graduated high school	0.4	0.3	0.5	0.3	0.3	0.4
Post high school	0.3	0.2	0.4	0.3	0.3	0.4
Size and type of community						
Rural	1.3	1.0	1.6	0.9	1.1	1.4
Disadvantaged urban	1.1	0.8	1.4	0.7	1.3	1.5
Advantaged urban	0.7	0.8	1.1	0.9	0.8	1.2
Main big city	0.7	0.8	1.0	0.7	1.0	1.2
Urban fringe	0.7	0.7	1.0	0.7	0.6	0.9
Medium city	0.6	1.1	1.3	0.9	1.4	1.6
Small places	0.4	0.5	0.6	0.5	0.5	0.7

Table 1:2-3

Standard errors for science performance of 9-, 13, and 17-year-old students, by selected characteristics: 1970 to 1982, continued

13-year-olds	1970	1973	Change	1973	1977	Change	1977	1982	Change
Total	0.4	0.5	0.6	0.4	0.4	0.6	—	—	0.8
Sex									
Male	0.2	0.2	0.3	0.2	0.2	0.2	—	—	0.8
Female	0.2	0.2	0.3	0.2	0.2	0.2	—	—	0.8
Race									
White	0.3	0.3	0.4	0.3	0.3	0.4	—	—	—
Black	0.5	0.6	0.8	0.5	1.0	1.1	—	—	—
Region									
Northeast	0.6	0.8	1.0	0.6	0.7	1.0	—	—	1.5
Southeast	0.9	0.8	1.2	0.7	0.6	0.9	—	—	1.6
Central	0.6	0.8	1.0	0.7	0.7	1.0	—	—	1.5
West	0.6	0.8	1.0	0.7	0.7	1.0	—	—	1.5
Parental education									
Not graduated high school	0.5	0.5	0.7	0.5	0.6	0.7	—	—	—
Graduated high school	0.3	0.3	0.4	0.3	0.3	0.4	—	—	—
Post high school	0.3	0.3	0.4	0.2	0.2	0.3	—	—	—
Size and type of community									
Rural	1.2	1.2	1.7	1.1	0.9	1.4	—	—	—
Disadvantaged urban	1.1	1.3	1.7	1.2	1.4	1.8	—	—	—
Advantaged urban	0.8	0.6	1.0	0.6	0.6	0.8	—	—	—
Main big city	0.8	0.9	1.2	0.8	1.0	1.3	—	—	—
Urban fringe	0.6	0.6	0.9	0.6	1.0	1.2	—	—	—
Medium city	1.0	1.2	1.6	1.1	1.0	1.5	—	—	—
Small places	0.5	0.4	0.7	0.4	0.4	0.6	—	—	—

Table 1:2-3

Standard errors for average science performance of 9-, 13-, and 17-year-old students by selected characteristics: 1970 to 1982, continued

17-year-olds	1970	1973	Change	1973	1977	Change	1977	1982	Change
Total	0.3	0.3	0.5	0.4	0.4	0.6	—	—	0.8
Sex									
Male	0.2	0.2	0.3	0.4	0.4	0.3	—	—	0.9
Female	0.2	0.2	0.3	0.2	0.2	0.3	—	—	0.8
Race									
White	0.2	0.2	0.3	0.2	0.2	0.3	—	—	—
Black	0.7	0.4	0.8	0.5	0.5	0.7	—	—	—
Region									
Northeast	0.6	0.5	0.8	0.6	0.8	1.0	—	—	1.5
Southeast	0.6	0.6	0.9	0.7	0.7	1.0	—	—	1.6
Central	0.5	0.6	0.8	0.6	0.6	0.9	—	—	1.5
West	0.5	0.6	0.8	0.6	0.7	1.0	—	—	1.6
Parental education									
Not graduated high school	0.4	0.4	0.6	0.4	0.4	0.6	—	—	—
Graduated high school	0.3	0.3	0.4	0.3	0.2	0.4	—	—	—
Post high school	0.2	0.2	0.3	0.2	0.2	0.3	—	—	—
Size and type of community									
Rural	1.0	0.8	1.3	0.8	0.9	1.2	—	—	—
Disadvantaged urban	1.1	1.1	1.5	1.0	1.3	1.6	—	—	—
Advantaged urban	0.7	0.8	1.0	0.8	1.3	1.5	—	—	—
Main big city	0.8	0.8	1.2	1.0	1.0	1.4	—	—	—
Urban fringe	0.7	0.8	1.0	0.8	0.7	1.1	—	—	—
Medium city	0.8	0.8	1.2	0.8	1.4	1.6	—	—	—
Small places	0.4	0.4	0.6	0.4	0.5	0.6	—	—	—

—Standard errors not available.

[1] Data from the 1982 Science Assessment and Research Project is not included for 9-year-olds because change for total content items was not reported.

SOURCES: National Assessment of Educational Progress, *Three National Assessments of Science, 1969–77: Changes in Achievement*, 1978. Science Assessment and Research Project, *Images of Science*, 1983.

Table 1:3-1

Average percent correct on an international test of mathematics achievement for students in the 8th grade* or equivalent in participating developed countries, by country: 1982

Country or province	Total sample size	Average percent correct on 157 items	Arithmetic average percent	Algebra average percent	Geometry average percent	Statistics average percent	Measurement average percent
Belgium							
Flemish	3,073	54.0	58.0	52.9	42.5	58.2	58.2
French	2,025	51.5	57.0	49.1	42.8	52.0	56.8
Canada							
British Columbia	2,168	52.3	58.0	47.9	42.3	61.3	51.9
Ontario	4,666	49.5	54.5	42.0	43.2	57.0	50.8
England and Wales	2,612	48.4	48.2	40.1	44.8	60.2	48.6
Finland	4,382	48.2	45.5	43.6	43.2	57.6	51.3
France	8,317	53.5	57.7	55.0	38.0	57.4	59.5
Hungary	1,754	56.6	56.8	50.4	53.4	60.4	62.1
Japan	8,091	63.5	60.3	60.3	57.6	70.9	68.6
Netherlands	5,418	58.1	59.3	51.3	52.0	65.9	61.9
New Zealand	5,176	46.4	45.6	39.4	44.8	57.3	45.1
Scotland	1,320	49.3	50.2	42.9	45.5	59.3	48.4
Sweden	3,451	43.5	40.6	32.3	39.4	56.3	48.7
United States	6,648	46.0	51.4	42.1	37.8	57.7	40.8
International mean for 14 countries or provinces	59,101	52.0	53.1	46.4	44.8	59.4	53.8

*The grade for analysis was defined as that grade in which a majority of students attained the age 13.0 to 13.11 by the middle of the school year. For Japan, the 7th grade was used because the Japanese considered the test more appropriate for that grade.

SOURCE: Livingstone, I.D., "Perceptions of the Intended and Implemented Mathematics Curriculum," a report of the Second International Mathematics Study prepared for the U.S. Department of Education, Center for Education Statistics by the members of the International Association for the Evaluation of Educational Achievement, June 1985.

Table 1:3-2

Average achievement score on an international test in algebra and calculus taken by advanced mathematics students in the 12th grade or equivalent in participating developed countries, by country: 1982

Country or province	Percentage of age group in advanced mathematics classes	Average achievement scores			
		For advanced mathematics students		For top 5 percent of group (estimate)	
		Algebra	Calculus	Algebra	Calculus
Belgium					
Flemish	10	51.3	49.8	57.5	55.5
French	10	48.0	47.9	55.3	53.7
Canada					
British Columbia	30	45.1	39.8	60.9	51.8
Ontario	19	48.7	49.4	59.6	59.4
England and Wales	6	52.3	53.6	54.9	56.1
Finland	15	53.0	52.7	60.7	61.0
Hungary	50	43.8	41.8	60.9	57.7
Japan	12	57.1	57.6	63.7	66.5
New Zealand	11	49.0	50.8	56.8	57.7
Scotland	18	45.7	44.6	56.2	52.9
Sweden	12	49.9	51.4	58.5	59.2
United States	13	43.7	43.2	52.8	50.9

SOURCE: Miller, D. and Linn, R.L., "Cross National Achievement with Differential Retention Rates," unpublished contractor report prepared for the U.S. Department of Education, Center for Statistics, April, 1986.

Table 1:4-1

Average writing performance of 4th, 8th, and 11th grade students, by selected characteristics: 1984

Selected characteristics	Grade		
	4	8	11
	Average writing score (ARM*)		
Total	158	205	219
Race/ethnicity			
Black	138	186	200
Hispanic	146	187	200
Asian	163	211	219
White	163	211	224
Sex			
Male	150	196	209
Female	166	214	229
Region			
Northeast	161	209	222
Southeast	154	203	216
Central	160	206	220
West	157	203	217
Size/type of community			
Rural	153	203	213
Disadvantaged urban	142	186	201
Advantaged urban	170	221	228
Parental education			
No high school diploma	143	189	199
Graduated high school	154	202	215
Post high school	166	213	227
Reading materials in the home			
0–2 items	147	186	197
3 items	154	198	205
4 items	159	203	216
5 items	164	210	223
Hours of TV viewing			
0–2 hours	164	211	222
3–5 hours	160	207	216
6 hours or more	150	196	207
Homework			
None assigned	158	203	213
Did not do it	150	196	214
Less than 1 hour	159	207	218
1–2 hours	162	210	222
More than 2 hours	153	207	227

*Average Response Method.

SOURCE: National Assessment of Educational Progress, *The Writing Report Card, Writing Achievement in American Schools, 1984* (Report 15-W-02), 1986.

Table 1:4-2

Standard errors for average writing performance of 4th, 8th, and 11th grade students, by race/ethnicity: 1984 (table 1:4)

Race/ethnicity	Grade 4	Grade 8	Grade 11
Total	1	1	1
Black	2	1	2
Hispanic	2	2	2
Asian	4	4	4
White	1	1	1

SOURCE: National Assessment of Educational Progress, *The Writing Report Card, Writing Achievement in American Schools, 1984* (Report 15-W-02), 1986.

Table 1:4-3

Standard errors for average writing performance of 4th, 8th, and 11th grade students, by selected characteristics: 1984 (table 1:4-1)

Selected characteristics	Grade 4	Grade 8	Grade 11
Total	1	1	1
Race/ethnicity			
Black	2	1	2
Hispanic	2	2	2
Asian	4	4	4
White	1	1	1
Sex			
Male	1	1	1
Female	1	1	1
Region			
Northeast	2	1	3
Southeast	2	2	2
Central	2	1	2
West	1	2	1
Size/type of community			
Rural	2	3	3
Disadvantaged urban	2	2	2
Advantaged urban	2	2	2
Parental education			
No high school diploma	3	2	2
Graduated high school	1	1	1
Post high school	1	1	1
Reading materials in the home			
0–2 items	1	2	3
3 items	2	1	2
4 items	2	1	1
5 items	1	1	1
Hours of TV viewing			
0–2 hours	1	1	1
3–5 hours	1	1	1
6 hours or more	2	2	2
Homework			
None assigned	1	1	1
Did not do it	2	3	2
Less than 1 hour	1	1	1
1–2 hours	1	1	1
More than 2 hours	3	2	2

SOURCE: National Assessment of Educational Progress, *The Writing Report Card, Writing Achievement in American Schools, 1984* (Report 15-W-02), 1986.

Technical note 1:4—Writing performance of 4th, 8th, and 11th grade students

A total of 22 informational, persuasive, and imaginative tasks were administered in the 1983–84 NAEP writing assessment. The Average Response Method (ARM) scores are based on 10 informational and persuasive tasks. The entire set of 10 tasks was assessed in the 8th grade, while 8 of the tasks were administered to students in the 4th grade, and 6 to students in the 11th grade. Nine of the tasks were given to at least two grades, with information on five of the tasks obtained from all three grades. Of the students in each grade level who participated in the assessment, the majority were given only one or two writing tasks, and none were given more than four.

The ARM writing score is a latent variable. The ARM procedure for estimating average writing achievement provides an average score for each respondent as if each had taken all 10 writing tasks and the average achievement across those 10 tasks had been computed. This predicted mean score on the 10 items was derived from each individual's rating on administered tasks and on imputed ratings based on selected demographic characteristics for the tasks not administered. The ARM estimates of average writing achievement are comparable across grade levels and, therefore, provide information about growth across years of schooling. The disadvantage of this procedure is that, like all multiple regression techniques, ARM scaling reduces the variation in scores.

NAEP also estimated average writing achievement based on the observed sample means of each grade level across each of the 15 separate writing tasks administered to that grade level. The average of the observed sample means for each of the tasks is an unbiased estimate of average student performance at the grade level on those 15 writing tasks. The trouble with basing estimates on the observed sample means is that each grade level was given a partially overlapping but different set of writing tasks. Some easier writing tasks were given to the 4th grade students and some more difficult tasks to the 11th grade students. As a consequence, interpretations of grade level differences in achievement are confounded.

Average response method scores for writing achievement are presented in tables 1:4 and 1:4-1. Writing scores based on the mean of 15 tasks given in each grade are available in *The Writing Report Card.**

*National Assessment of Educational Progress, *The Writing Report Card, Writing Achievement in American Schools, 1984* (Report 15-W-02), 1986.

Table 1:5-1

State tables of college entrance examination scores: 1982 and 1986

SAT State	Average SAT score of high school graduates, 1986	Percentage of high school graduates taking test in 1986[1]	Average SAT score of high school graduates 1982	Percentage of high school graduates taking test in 1982[2]
California	904	43.3	899	38.4
Connecticut	914	69.5	896	69.1
Delaware	917	59.6	897	53.4
District of Columbia	852	53.5	821	53.2
Florida	895	44.4	889	37.5
Georgia	842	55.4	823	49.1
Hawaii	880	51.3	857	47.2
Indiana	874	49.5	860	47.1
Maine	900	51.8	890	47.6
Maryland	911	53.8	889	50.3
Massachusetts	909	66.5	888	65.6
New Hampshire	935	61.0	925	56.4
New Jersey	889	66.0	869	64.7
New York	898	64.8	896	61.6
North Carolina	835	51.3	827	46.6
Oregon	930	46.0	908	41.7
Pennsylvania	894	54.4	885	51.4
Rhode Island	898	58.7	877	60.7
South Carolina	826	50.0	790	48.3
Texas	877	39.3	868	32.4
Vermont	916	61.8	904	54.2
Virginia	908	58.9	888	51.0

[1]The 1986 estimated percentage of high school graduates taking the ACT or SAT was calculated by dividing the number of 1986 ACT or SAT test takers by the number of 1985 public and 1980 private high school graduates. The number of 1986 high school graduates was not available.

[2]The 1982 estimated percentage of high school graduates taking the ACT or SAT was calculated by dividing the number of 1982 ACT or SAT test takers by the number of 1982 public and 1980 private high school graduates.

[3]ACT scores and the percentages of graduates taking the exam may not be strictly comparable between 1986 and 1982. The 1986 scores and number of test takers represent data for students who took the ACT exam as seniors and for those who took the test as juniors but did not take it again when they were seniors. Prior years' scores and numbers of test takers included all test takers.

SOURCE: U.S. Department of Education, Office of Planning, Budget and Evaluation, *State Education Statistics*, 1987.

Table 1:5-1

State tables of college entrance examination scores: 1982 and 1986, continued

ACT State	Average ACT score of high school graduates, 1986[3]	Percentage of high school graduates taking test in 1986[1]	Average ACT score of high school graduates 1982	Percentage of high school graduates taking test in 1982[2]
Alabama	18.2	49.6	17.2	55.3
Alaska	18.1	37.6	18.7	31.5
Arizona	19.3	36.8	18.7	41.2
Arkansas	18.1	52.3	17.7	56.3
Colorado	19.9	59.9	19.6	66.8
Idaho	19.2	52.4	18.9	55.2
Illinois	19.1	60.2	18.6	67.4
Iowa	20.6	56.3	20.3	54.5
Kansas	19.2	60.6	18.9	60.8
Kentucky	18.1	50.9	17.5	53.7
Louisiana	16.9	57.5	16.7	60.8
Michigan	18.9	51.2	18.7	51.4
Minnesota	20.3	30.5	20.2	26.9
Mississippi	16.3	60.2	15.5	74.4
Missouri	19.2	47.9	18.7	45.3
Montana	19.8	51.5	19.5	49.5
Nebraska	20.0	61.8	19.9	73.0
Nevada	19.0	40.1	18.3	44.5
New Mexico	17.9	52.3	17.6	56.5
North Dakota	18.5	61.2	17.8	64.5
Ohio	19.3	46.4	19.0	49.2
Oklahoma	17.8	48.1	17.6	51.4
South Dakota	19.9	61.9	19.1	61.7
Tennessee	18.0	56.6	17.5	56.3
Utah	19.1	61.7	18.4	66.4
West Virginia	17.7	47.5	17.4	48.5
Wisconsin	20.5	38.8	20.4	32.0
Wyoming	19.7	55.6	19.2	52.2

SOURCE: U.S. Department of Education, Office of Planning, Budget and Evaluation, *State Education Statistics*, 1987.

Table 1:5-2

Scholastic Aptitude Test (SAT) and American College Testing (ACT) scores, by control of high school: School year ending 1981–1985

Year and control	English*	Mathematics	Social Studies	Natural Science	Composite
			Mean ACT scores		
1981–82					
Public	17.6	17.1	17.2	20.8	18.4
Private	18.7	17.6	18.0	21.2	19.0
Catholic	18.6	17.9	18.2	21.2	19.1
1982–83					
Public	17.7	16.9	17.0	20.9	18.2
Private	18.7	17.4	17.8	21.2	18.9
Catholic	18.7	17.7	18.1	21.3	19.1
1984–85					
Public	18.0	17.0	17.2	21.0	18.4
Private	18.8	17.4	17.8	21.3	18.9
Catholic	18.9	17.8	18.1	21.4	19.2
			Median SAT scores		
1981					
Public	420	467	—	—	—
Private	431	466	—	—	—
1982					
Public	423	469	—	—	—
Private	437	468	—	—	—
1983					
Public	421	467	—	—	—
Private	435	467	—	—	—
1984					
Public	423	469	—	—	—
Private	437	469	—	—	—
1985					
Public	427	475	—	—	—
Private	441	474	—	—	—

—Not applicable.
*"English" is the ACT designation; "verbal," the SAT designation.
SOURCE: American College Testing Program, *Reference Norms for Spring (various years) ACT Tested H.S. Graduates*, various years. College Entrance Examination Board, *Profiles, College-Bound Seniors*, various years.

Table 1:5-3

Average scores on the Preliminary Scholastic Aptitude Test: 1959 to 1986

Year	Verbal score	Mathematics score
1959	41.2	45.0
1960	40.9	44.8
1961	42.3	46.1
1962	42.9	46.5
1963	43.3	45.6
1964	42.9	44.7
1965	42.2	45.9
1966	42.7	45.0
1967	42.0	44.5
1968	42.6	45.6
1969	42.2	45.0
1970	41.4	46.1
1971	42.2	45.2
1972	42.7	46.9
1973	41.8	45.5
1974	41.6	45.9
1975	41.0	45.5
1976	40.5	45.0
1977	39.9	44.2
1978	40.6	44.8
1979	40.2	45.3
1980	40.6	45.1
1981	41.5	45.1
1982	41.0	44.7
1983	40.9	44.7
1984	41.0	44.2
1985	40.9	45.0
1986	40.9	45.0

SOURCE: College Board and National Merit Scholarship Corporation, *Preliminary Scholastic Aptitude Test/National Merit Scholarship Qualifying Test October Administrations*, unpublished data, 1987.

Table 1:6-1

Percentage of high school graduates scoring 26 or more on th English and mathematics tests in the American College Testing Program: 1972–86

Graduation year	Number of graduates (in thousands)	English		Mathematics	
		Number	Percentage	Number	Percentage
1972	3,001	20,319	0.7	77,890	2.6
1973	3,036	44,246	1.5	169,611	5.6
1974	3,073	36,998	1.2	155,390	5.1
1975	3,133	35,722	1.1	150,030	4.8
1976	3,148	34,583	1.1	1?1,415	4.2
1977	3,155	44,614	1.4	148,712	4.7
1978	3,127	53,884	1.7	153,954	4.9
1979	3,117	48,813	1.5	140,438	4.5
1980	3,043	49,332	1.6	147,996	4.9
1981	3,020	50,146	1.7	142,079	4.7
1982	3,001	56,316	1.9	136,768	4.6
1983	2,888	58,471	2.0	142,001	4.9
1984	2,773	59,970	2.2	137,620	5.0
1985[1]	[2]2,683	49,787	1.9	116,091	4.3
1986	[3]2,641	57,882	2.2	126,545	4.8

[1]Before 1985, the number of students scoring 26 or more is based on all high school students taking the ACT test. Beginning in 1985, the number of students scoring 26 or more is based on high school graduates taking the ACT test.
[2]Preliminary.
[3]Projected.

SOURCE: American College Testing Program, *High School Profile Report: Normative Data*, various years. U.S. Department of Education, Center for Education Statistics, *Digest of Education Statistics, 1987*; "Targeted Fore:-st: Public High School Graduates," *Statistical Highlights*, 1987.

Table 1:7-1

Standard deviations (and numbers) for average American College Testing (ACT) Assessment scores, by content area and number of courses taken in relevant content area: 1985 (table 1:7)

Content area	Total	Number of courses taken in content area						
		1	2	3	4	5	6	7
English	5.1 (31,419)	5.3 (223)	5.4 (150)	5.2 (2,561)	5.0 (19,283)	5.0 (8,521)	—	—
Mathematics	7.6 (31,400)	9.3 (2,085)	5.5 (3,648)	6.2 (6,657)	6.2 (7,715)	5.8 (6,025)	5.1 (3,119)	5.1 (771)
Social studies	7.0 (31,142)	6.9 (769)	7.1 (4,983)	7.0 (10,342)	6.9 (8,832)	6.7 (4,040)	6.7 (1,197)	5.9 (240)
Natural science	6.1 (31,148)	5.3 (2,676)	5.6 (10,134)	5.7 (11,439)	5.3 (6,077)	—	—	—

—Insufficient number of students for reliable analysis.
SOURCE: Laing, J., Engen, H., and Maxey, J. "The Relationship of High School Coursework to the Corresponding ACT Assessment Scores," *ACT Research Report 87-3*, 1987.

Technical note 1:7—Academic coursework and achievement

The data for this indicator are based on a 20 percent random sample of seniors taking the ACT on the October 1985 test date.

In the fall of 1985, the American College Testing (ACT) Program expanded the collection of information on high school courses taken by students completing the ACT Assessment. Students were asked to indicate which of 30 secondary-level courses they had taken or planned to take before graduating from high school. The particular courses listed include those that customarily form the basis of a college preparatory (academic or "core") high school curriculum and are frequently required or recommended for admission to postsecondary institutions. These 30 courses were selected to give a relatively complete picture of a student's basic academic preparation. The courses listed in the four subject areas represented in the ACT tests were:

English
- English taken during the 9th grade
- English taken during the 10th grade
- English taken during the 11th grade
- English taken during the 12th grade
- Speech

Mathematics
- First-year algebra (algebra I, not pre-algebra)
- Second-year algebra (algebra II)
- Geometry
- Trigonometry
- Calculus (no pre-calculus)
- Other math beyond algebra II
- Computer math/computer science

Natural Science
- General/physical/earth science
- Biology
- Chemistry
- Physics

Social Studies
- U.S. History (American history)
- World history/world civilization
- Other history (European, State, etc.)
- American government/civics
- Economics (consumer economics)
- Geography
- Psychology

Language
- Spanish
- French
- German
- Other language

Arts
- Art (painting, etc.)
- Music (vocal or instrumental)
- Drama/theater (if taken as a course)

Table 1:8-1

High school completion, by race and Hispanic origin, for persons aged 25–34: 1974–85

Year	Total	White	Black	Hispanic*
	Percent of age group			
1974	81.1	82.8	68.4	49.2
1975	81.9	83.8	87.5	53.4
1976	82.3	83.8	71.4	51.5
1977	83.8	84.9	72.0	56.2
1978	84.8	85.9	74.4	55.0
1979	85.0	86.3	74.7	54.3
1980	85.4	86.7	76.4	56.1
1981	85.9	86.8	76.8	54.9
1982	86.3	87.3	79.7	56.6
1983	86.7	87.6	80.2	57.5
1984	86.8	87.9	79.9	58.9
1985	86.3	87.2	80.7	59.4

*Hispanics may be of any race.
NOTE: For any given year, 18- to 19-, 20- to 24-, and 25- to 34-year-olds represent different cohorts of persons. Therefore, these tables should be used with caution when attempting to make inferences about the completion rates of a specific cohort as it ages. Separate analyses were not done for Asians because they are not identifiable from the October Current Population Survey data tapes.
SOURCE: U.S. Department of Commerce, Bureau of the Census, Current Population Reports, Population Characteristics, Series P-20, *School Enrollment—Social and Economic Characteristics of Students: October (various years).*

Table 1:8-2

Standard errors for high school completion, by race and Hispanic origin, for persons aged 18–19 and 20–24 (table 1:8)

Year	Age 18–19				Age 20–24			
	Total	White	Black	Hispanic*	Total	White	Black	Hispanic*
1974	0.7	0.7	2.4	4.2	0.4	0.4	1.5	2.8
1975	.7	.7	2.3	4.2	.4	.4	1.5	2.9
1976	.7	.7	2.3	4.0	.4	.4	1.4	2.8
1977	.7	.7	2.3	4.0	.4	.4	1.4	2.8
1978	.7	.7	2.3	4.2	.4	.4	1.4	2.8
1979	.7	.7	2.3	4.1	.4	.4	1.4	2.8
1980	.7	.7	2.5	4.0	.4	.4	1.5	2.8
1981	.7	.7	2.2	3.7	.4	.4	1.3	2.4
1982	.7	.8	2.2	3.7	.4	.4	1.2	2.4
1983	.7	.8	2.2	3.8	.4	.4	1.2	2.4
1984	.8	.8	2.4	4.1	.4	.4	1.2	2.5
1985	.8	.8	2.4	4.1	.4	.4	1.2	2.3

*Hispanics may be of any race.
SOURCE: U.S. Department of Commerce, Bureau of the Census, Current Population Reports, Population Characteristics, Series P-20, *School Enrollment—Social and Economic Characteristics of Students: October (various years);* Current Population Surveys (unpublished tabulations).

Table 1:8-3

Standard errors for high school completion, by race and Hispanic origin, for persons aged 25–34: 1974–85 (table 1:8-1)

Year	Total	White	Black	Hispanic*
	Percent of age group			
1974	0.3	0.3	1.3	2.0
1975	.3	.3	1.2	1.8
1976	.3	.3	1.2	1.7
1977	.3	.3	1.1	1.8
1978	.3	.3	1.1	1.7
1979	.3	.3	1.1	1.7
1980	.3	.3	1.0	1.6
1981	.3	.3	1.0	1.6
1982	.3	.3	1.0	1.6
1983	.3	.3	.9	1.5
1984	.3	.3	.9	1.5
1985	.3	.3	.9	1.4

*Hispanics may be of any race.

SOURCE: U.S. Department of Commerce, Bureau of the Census, Current Population Reports, Population Characteristics, Series P-20, *School Enrollment—Social and Economic Characteristics of Students: October (various years).*

Table 1:9-1

Standard errors (and unweighted sample sizes) for high school dropouts and completers, sophomore class of 1980, by sex and race/ethnicity (table 1:9)

Race/ethnicity	Total		Male		Female	
			Percent who dropped out			
Total	0.55	(13,676)	0.80	(6,648)	0.70	(7,028)
White	.55	(8,595)	.82	(4,190)	.75	(4,405)
Black	1.65	(2,040)	2.55	(970)	1.79	(1,070)
Hispanic	1.98	(2,209)	2.69	(1,063)	2.84	(1,146)
			Percent of dropouts who completed by fall 1984			
Total	1.67	(2,528)	2.29	(1,327)	2.54	(1,201)
White	2.11	(1,432)	2.98	(738)	3.16	(694)
Black	3.44	(461)	4.62	(262)	4.82	(199)
Hispanic	4.01	(503)	5.30	(251)	5.93	(252)
			Percent of all students who completed by fall 1984			
Total	0.46	(13,676)	0.67	(6,648)	0.60	(7,028)
White	.45	(8,595)	.68	(4,190)	.60	(4,405)
Black	1.33	(2,040)	1.99	(970)	1.61	(1,070)
Hispanic	1.94	(2,209)	2.65	(1,063)	2.66	(1,146)

SOURCE: U.S. Department of Education, Center for Education Statistics, High School and Beyond study, 1980 sophomore class second follow-up data file, unpublished tabulations.

Technical note 1:9—High School Dropouts Who Later Complete Their Education

The High School and Beyond study (HS&B) surveyed in the spring of 1980 more than 30,000 high school sophomores in more than 1,000 public and private high schools across the country. HS&B subsequently resurveyed a sample of these students in the spring of 1982 and again in the spring of 1984. The study also retrieved the high school transcripts of a large sample of respondents. From these pieces of information, it is possible to reconstruct fairly completely the enrollment histories of this sample of students. The variable used here to identify completion status was constructed from second follow-up transcript study and first follow-up student variables. Student data were used, except for 419 cases where transcript information differed from student-reported information. For further details, see Jones, C. *High School and Beyond 1980 Sophomore Cohort Second Follow-Up (1984): Data User's Manual*, available from the U.S. Department of Education, Center for Education Statistics.

Table 1:10-1

Average scale scores on the NAEP reading scale, prose scale, document scale, and quantitative scale for the young adult population aged 21 to 25, by selected characteristics: 1985

Selected characteristics	NAEP reading scale	Prose scale	Document scale	Quantitative scale
	Average scale scores			
Total	305.0	305.0	305.0	305.0
Sex				
Male	304.6	305.6	305.3	304.9
Female	305.4	304.5	304.8	305.1
Race/ethnicity				
White	313.8	314.4	315.7	314.6
Black	263.3	258.3	255.7	259.1
Hispanic	286.6	285.5	278.7	280.3
Other	299.0	304.5	298.2	306.4
Region				
Northeast	310.8	311.1	309.2	309.1
Southeast	291.7	289.8	291.4	290.6
Central	307.4	309.3	311.7	311.7
West	310.2	309.9	309.5	308.5
Respondent education*				
Less than high school graduate	253.6	253.4	246.5	253.3
High school equivalency certificate	283.9	287.3	280.8	275.3
High school graduate	292.8	291.9	292.5	291.5
Some postsecondary	319.9	319.3	320.8	320.4
College degree	343.2	344.6	348.1	344.8
Parental education				
Less than high school	274.8	268.1	267.1	267.5
Some high school	272.2	272.6	273.5	277.3
High school, some postsecondary	305.0	304.4	304.1	303.0
2-year, 4-year degree or more	326.8	329.1	329.3	329.1
Twelve-month employment status				
Full time, all year	302.9	303.3	302.5	301.7
Part time, all year	321.1	320.8	325.3	323.0
Full time, part year	309.3	307.5	309.8	309.8
Part time, part year	312.2	313.7	311.4	311.4
Unemployed	260.3	255.6	245.5	258.3
In school	313.5	313.6	313.8	320.5
Keeping house	277.5	279.5	275.7	277.5

*Subgroup classifications differ from those previously published.

SOURCE: Kirsch, I. and Jungeblut, A. *Literacy: Profiles of America's Young Adults*, Final Report (Report No. 16-PL-01) Princeton, NJ: National Assessment of Educational Progress, 1986. National Assessment of Educational Progress, Young Adult Literacy, 1985 (Center for Education Statistics special tabulations).

Table 1:10-2

Standard errors of average scale scores of young adults aged 21–25 on the NAEP reading scale, prose scale, document scale, and quantitative scale, by race/ethnicity and educational attainment: 1985 (table 1:10)

Race/ethnicity and scale	Total	Educational attainment				
		Less than high school graduate	High school equivalency certificate	High school graduate	Some postsecondary	College degree
Total						
NAEP reading	2.0	3.2	6.1	2.3	2.3	3.6
Prose	2.0	3.5	6.6	2.2	2.2	3.5
Document	1.9	3.3	5.7	2.2	2.2	3.4
Quantitative	2.1	3.5	7.2	2.2	2.2	3.4
White						
NAEP reading	2.0	4.9	7.1	3.0	2.7	4.0
Prose	1.9	5.2	7.7	2.6	2.7	3.9
Document	1.9	4.9	6.9	2.7	2.6	3.7
Quantitative	2.2	5.2	6.1	2.9	2.6	3.7
Black						
NAEP reading	2.4	4.7	—	3.5	4.5	10.5
Prose	2.4	4.9	—	3.6	4.6	10.5
Document	2.6	4.2	—	3.7	4.5	9.3
Quantitative	2.3	4.7	—	3.6	4.6	9.0
Hispanic						
NAEP reading	4.7	7.4	—	6.6	6.7	—
Prose	4.5	7.4	—	6.9	6.9	—
Document	4.4	6.9	—	6.3	6.5	—
Quantitative	5.0	7.6	—	6.0	6.7	—

—Insufficient number of cases for reliable analysis.
SOURCE: National Assessment of Educational Progress, Young Adult Literacy, 1985 (Center for Education Statistics special tabulations).

Table 1:10-3

Standard errors for average scale scores on the NAEP reading scale, prose scale, document scale, and quantitative scale for the young adult population aged 21 to 25, by selected characteristics: 1985 (table 1:10-1)

Selected characteristics	NAEP reading scale	Prose scale	Document scale	Quantitative scale
Total	2.0	2.0	1.9	2.1
Sex				
Male	2.3	2.6	2.6	2.8
Female	2.3	2.1	1.9	2.3
Race/ethnicity				
White	2.0	1.9	1.9	2.2
Black	2.4	2.4	2.6	2.3
Hispanic	4.7	4.5	4.4	5.0
Other	9.0	6.5	5.1	6.7
Region				
Northeast	3.6	2.9	2.6	4.1
Southeast	3.1	5.9	4.4	3.6
Central	3.8	3.8	3.7	3.9
West	4.6	4.4	4.5	4.2
Respondent education*				
Less than high school graduate	3.2	3.5	3.3	3.5
High school equivalency certificate	6.1	6.6	5.7	7.2
High school graduate	2.3	2.2	2.2	2.2
Some postsecondary	2.3	2.2	2.2	2.2
College degree	3.6	3.5	3.4	3.4
Parental education				
Less than high school	5.2	5.8	5.8	4.9
Some high school	3.0	3.7	2.4	3.8
High school, some postsecondary	1.7	2.3	2.2	1.7
2-year, 4-year degree or more	3.5	2.5	2.7	3.2
Twelve month employment status				
Full time, all year	2.1	2.5	2.0	2.4
Part time, all year	3.8	3.6	3.9	4.1
Full time, part year	3.7	3.8	3.3	3.4
Part time, part year	5.9	6.1	4.7	4.8
Unemployed	7.3	9.4	6.5	7.2
In school	7.8	5.8	6.3	6.8
Keeping house	7.7	9.2	5.1	8.7

*Subgroup classifications differ from those previously published.

SOURCE: Kirsch, I. and Jungeblut, A. *Literacy: Profiles of America's Young Adults*, Final Report (Report No. 16-PL-01) Princeton, NJ: National Assessment of Educational Progress, 1986. National Assessment of Educational Progress, Young Adult Literacy, 1985 (Center for Education Statistics special tabulations).

Technical note 1:10—Literacy skills of young adults

The means for the prose, document, and quantitative scales were set equal to total group performance on the NAEP reading scale which was derived from the 1983-84 NAEP reading assessment of 9-, 13-, and 17-year-old students.[1] The total group mean for the young adults on each of the scales is 305. The criteria for selecting examples of tasks at each level were that 80 percent or more of the respondents at a given point (e.g., 250) could answer the item correctly while less than 50 percent of the respondents at the next lower level (e.g., one standard deviation lower or 200) could answer the items correctly.[2]

Definitions of the scales and examples of tasks at the three levels reported in Table 1:10 follow:

1) *NAEP reading scale*—based on multiple-choice exercises similar in content and length to traditional tests of reading achievement

Score of 200: the ability to understand specific or sequentially related information;
Score of 300: the ability to find, understand, summarize, and explain relatively complicated information;
Score of 350: the ability to synthesize and learn from specialized reading materials.

2) *Prose comprehension*—the knowledge and skills needed to gain understanding and use information from texts such as editorials, news stories, and poems

Score of 200: writing a simple description of the type of job one would like to have;
Score of 300: locating information in a news article or almanac;
Score of 350: synthesizing the main argument from a lengthy newspaper editorial.

3) *Document literacy*—the knowledge and skills required to locate and use information

Score of 200: matching money-saving coupons to a shopping list of several items;
Score of 300: following directions to travel from one location to another using a map;
Score of 350: using a bus schedule to select the appropriate bus for given departures and arrivals.

4) *Quantitative literacy*—the knowledge and skills needed to apply the arithmetic operations of addition, subtraction, multiplication, and division, either alone or sequentially

Score of 200: totaling two entries on a bank deposit slip;
Score of 300: entering deposits and checks and balancing a checkbook;
Score of 350: determining the amount of tip in a restaurant given the percentage of the bill.

[1]National Assessment of Educational Progress. *The Reading Report Card. Progress Toward Excellence in Our Schools* (Report No. 15-R-01). 1985.
[2]Kirsch, I., and Jungeblut, A. *Literacy: Profiles of America's Young Adults* (Report No. 16-PL-02). Princeton, NJ: National Assessment of Educational Progress. 1986.

Table 1:11-1

Standard errors for postsecondary enrollment for 1980 high school graduates, by control of high school and type of institution (table 1:11)

Type of institution	All graduates	High school graduates	
		Public school	Private school
		For percent enrolled in October 1980	
Any postsecondary institution	0.8	0.8	2.1
4-year	.7	.8	2.3
2-year	.6	.6	1.7
Vocational/technical	.3	.3	1.0
		For percent enrolled by February 1984	
Any postsecondary program	.7	.8	1.7
4-year	.8	.8	2.1
2-year	.7	.7	2.0
Vocational/technical	.4	.4	1.4

SOURCE: U.S. Department of Education, Center for Education Statistics, "High School and Beyond Study," unpublished tabulations, 1985.

Table 1:12-1

Current expenditures per pupil in average daily attendance in public elementary and secondary schools, by State: 1969–70 and 1984–85

State	Expenditures per pupil (in 1984–85 dollars)		Percent increase
	1969–70[1]	1984–85[2]	
United States	$2,285	$3,449	50.9
Alabama	1,523	2,325	52.7
Alaska	3,143	7,843	149.5
Arizona	2,016	2,724	35.1
Arkansas	1,589	2,353	48.1
California	2,428	3,256	34.1
Colorado	2,066	3,697	78.9
Connecticut	2,663	4,738	77.9
Delaware	2,520	4,184	66.0
District of Columbia	2,851	4,571	60.3
Florida	2,050	3,238	58.0
Georgia	1,646	2,657	61.4
Hawaii	2,353	3,465	47.3
Idaho	1,689	2,401	42.2
Illinois	2,546	3,538	39.0
Indiana	2,038	3,051	49.7
Iowa	2,363	3,439	45.5
Kansas	2,159	3,560	64.9
Kentucky	1,526	2,390	56.6
Louisiana	1,814	2,905	60.1
Maine	1,939	3,024	56.0
Maryland	2,571	4,102	59.5
Massachusetts	2,405	4,026	67.4
Michigan	2,531	3,848	52.0
Minnesota	2,530	3,674	45.2
Mississippi	1,402	2,357	68.1
Missouri	$1,984	$2,958	49.1
Montana	2,189	3,847	75.7
Nebraska	2,062	3,471	68.3
Nevada	2,154	2,829	31.3
New Hampshire	2,024	3,271	61.6
New Jersey	2,845	4,504	58.3
New Mexico	1,979	3,153	59.3
New York	3,715	5,492	47.8
North Carolina	1,714	2,625	53.2
North Dakota	1,931	3,210	66.2
Ohio	2,044	3,257	59.3
Oklahoma	1,692	2,850	68.4
Oregon	2,589	3,889	50.2
Pennsylvania	2,469	4,237	71.6
Rhode Island	2,495	4,285	71.7
South Carolina	1,715	2,591	51.1
South Dakota	1,932	2,892	49.7
Tennessee	1,585	2,363	49.1
Texas	1,747	3,043	74.2
Utah	1,753	2,220	26.6
Vermont	2,260	3,651	61.5
Virginia	1,982	3,155	59.2
Washington	2,563	3,723	45.3
West Virginia	1,876	3,244	72.9
Wisconsin	2,471	3,816	54.4
Wyoming	2,397	4,799	100.2

[1]Based on the Consumer Price Index, prepared by the Bureau of Labor Statistics, U.S. Department of Labor. Data were adjusted from a calendar-year basis to a school-year basis.
[2]Preliminary.

SOURCE: U.S. Department of Education, Center for Education Statistics, *Digest of Education Statistics, 1987* (from *Statistics of State School Systems*); and Center for Education Statistics, "Common Core of Data" survey (October 1986).

Table 1:14-1

State indices of public school finance in relation to population: 1972–73 and 1984–85

State	State index		State and local education revenues* 1984–85 (in millions)	Public elementary/ secondary enrollment, Fall 1984 (in thousands)	Per pupil education revenues, 1984–85	Per capita personal income, 1985
	1972–73	1984–85				
Alabama	[illegible]	209	1,567	713	2,199	10,510
Alaska	[illegible]	366	679	105	6,495	17,756
Arizona		[illegible]18	1,439	530	2,714	12,454
Arkansas		[illegible]03	895	433	2,069	10,180
California		[illegible]5	13,004	4,151	3,133	15,255
Colorado	219	270	2,125	545	3,897	14,413
Connecticut	264	246	2,026	468	4,328	17,627
Delaware	253	263	346	92	3,765	14,337
District of Columbia	186	221	346	87	3,955	17,909
Florida	192	241	4,929	1,524	3,234	13,397
Georgia	178	202	2,610	1,062	2,457	12,158
Hawaii	192	214	475	164	2,857	13,542
Idaho	170	201	443	208	2,128	10,605
Illinois	212	197	5,207	1,834	2,838	14,397
Indiana	226	259	3,088	973	3,175	12,276
Iowa	242	249	1,565	491	3,188	12,779
Kansas	219	259	1,472	405	3,631	14,046
Kentucky	190	182	1,244	644	1,930	10,585
Louisiana	230	243	2,144	801	2,676	11,015
Maine	234	249	591	208	2,850	11,423
Maryland	259	241	2,490	674	3,696	15,356
Massachusetts	255	244	3,307	859	3,848	15,790
Michigan	261	268	6,042	1,697	3,560	13,298
Minnesota	292	262	2,582	702	3,680	14,071
Mississippi	172	187	789	466	1,693	9,035
Missouri	218	207	2,096	794	2,641	12,784
Montana	240	340	563	154	3,644	10,728
Nebraska	202	230	837	266	3,151	13,699
Nevada	185	181	384	152	2,535	13,981
New Hampshire	211	204	457	156	2,924	14,308
New Jersey	257	285	5,268	1,129	4,665	16,368
New Mexico	212	276	[illegible]08	272	2,964	10,741
New York	321	313	12,630	2,646	4,774	15,237
North Carolina	185	208	2,559	1,089	2,350	11,314
North Dakota	211	239	369	119	3,112	13,034
Ohio	207	242	5,670	1,805	3,140	12,979
Oklahoma	195	198	1,416	590	2,401	12,103
Oregon	260	304	1,651	447	3,695	12,165
Pennsylvania	272	316	6,979	1,702	4,101	12,959
Rhode Island	263	275	502	134	3,744	13,592
South Carolina	194	248	1,573	603	2,611	10,514
South Dakota	212	234	323	123	2,620	11,207
Tennessee	154	172	1,537	817	1,880	10,934
Texas	198	252	10,070	3,040	3,312	13,165
Utah	216	248	984	390	2,522	10,166
Vermont	292	295	308	90	3,422	11,599
Virginia	205	218	2,978	965	3,085	14,164
Washington	225	272	2,677	741	3,612	13,267
West Virginia	205	272	999	363	2,754	10,112
Wisconsin	257	278	2,752	768	3,585	12,883
Wyoming	181	459	603	101	5,950	12,955

*Data are preliminary.

SOURCES: U.S. Department of Education, Center for Education Statistics, "Common Core of Data" survey; and U.S. Department of Commerce, Bureau of Economic Analysis, *Commerce News*, "1985 State Per Capita Personal Income," May 6, 1986.

Table 1:15-1

Standard errors for public school library media centers, by selected characteristics: 1985 (table 1:15)

Characteristic	Data for 1985*
Percent of schools with centers	0.5
Percent of pupils in schools with centers	—
Staff of centers	
Total full-time-equivalent (FTE) staff	—
Average FTE staff per school	.01
Expenditures, other than salaries and wages, ' centers	
Average per school	
Total	$149
Collection	—
Equipment	—
Average per pupil	
Total	—
Collection	—
Equipment	—

—Not available.

*Standard errors are available only for 1985 data.

SOURCE: U.S. Department of Education, Center for Education Statistics, *Statistics of Public and Private School Library Media Centers, 1985–86 (with historical comparisons from 1958–1985)*, April 1987.

Table 1:15-2

Standard errors for private school library media centers, by selected characteristics: 1985 (table 1:15)

Characteristic	Data for 1985*
Percent of schools with centers	2.8
Percent of pupils in schools with centers	—
Average full-time-equivalent (FTE) center staff per school	.06
Expenditures, other than salaries and wages, for centers	
Average per school	
Total	$302
Collection	—
Equipment	—
Average per pupil	
Total	—
Collection	—
Equipment	—

—Not available.

*Standard errors are available only for 1985 data.

SOURCE: U.S. Department of Education, Center for Education Statistics, *Statistics of Public and Private School Library Media Centers, 1985–86 (with historical comparisons from 1958–1985)*, April 1987.

Table 1:16-1

Full-time-equivalent staff employed in public school systems: 1982–85

Type of staff	1982	1983	1984	1985
		Number (in thousands)		
All	3,927	3,908	4,044	4,137
Classroom teachers	2,121	2,126	2,169	2,210
Instructional support[1]	398	387	399	420
Administrators and administrative support[2]	511	512	518	518
Other support[3]	899	883	959	988
		Percentage distribution		
All	100.0	100.0	100.0	100.0
Classroom teachers	54.0	54.4	53.6	53.4
Instructional support	10.1	9.9	9.9	10.2
Administrators and administrative support	13.0	13.1	12.8	12.5
Other support	22.9	22.8	23.7	23.9

[1]Includes instructional aides, guidance counselors, and librarians.
[2]Includes school and district administrators and the associated clerical staff.
[3]Includes all employees not included above, such as media personnel, bus drivers, security officers, cafeteria workers, etc.

NOTE: Detail may not add to totals due to rounding.

SOURCE: U.S. Department of Education, Center for Education Statistics, *Digest of Education Statistics, 1985–86* and *1987*, based on "Common Core of Data" survey and unpublished estimates. See also: *OERI Bulletin*, "Staff in Public Elementary Schools, Secondary Schools, and School Systems, Fall 1984," January 1987; and *OERI Historical Report*, "Staff in Public Elementary and Secondary Schools and School Systems, Fall 1983," February 1987.

Table 1:17-1

Trends in pupil/teacher ratios in public elementary and secondary schools: 1970–71 to 1985–86

Year	Pupil/teacher ratio	Year	Pupil/teacher ratio
1970–71	22.3	1978–79	19.3
1971–72	22.3	1979–80	19.1
1972–73	21.8	1980–81	19.0
1973–74	21.3	1981–82	18.9
1974–75	20.8	1982–83	18.8
1975–76	20.4	1983–84	18.5
1976–77	20.3	1984–85	18.1
1977–78	19.7	1985–86	*17.9

*Preliminary.

NOTE: The basic data used to calculate the ratios in this table and in indicator 1:17 were collected by different surveys using different methodologies. Consequently, the estimated pupil/teacher ratio for 1984-85 in this table differs from the ratio in table 1:17.

SOURCE: U.S. Department of Education, Center for Education Statistics, *Statistics of Public Elementary and Secondary Day Schools*, various years; and unpublished tabulations.

Table 1:17-2

Standard errors for pupil/teacher ratios, by level, size and control of school (table 1:17)

School level	Total	Number of students enrolled			
		Less than 100	100–299	300–499	500 or more
					Public schools, 1984-85
All*	0.10	0.60	0.26	0.20	0.12
Elementary	.14	—	.30	.23	.20
Secondary	.13	—	.38	.28	.14
Combined	.56	—	.53	.66	.78
					Private schools, 1985-86
All schools*	.46	.70	.61	.62	.92
Elementary	.55	.98	.60	1.28	.98
Secondary	.68	—	.57	.85	.91
Combined	.64	.93	1.13	.79	1.03

—Too few cases for a reliable estimate.
*Does not include special education, alternative and vocational/technical schools. Elementary schools contain no grade higher than 8. Secondary schools contain no grade lower than 7. Combined schools contain all other grade spans, such as K-12 or ungraded.

NOTE: Pupil/teacher ratios are based upon the number of pupils enrolled divided by the number of full-time-equivalent teachers.

SOURCE: U.S. Department of Education, Center for Education Statistics, 1985–86 Private School Survey and 1985 Public School Survey, unpublished tabulations.

Table 1:17-3

Number of schools, by level, size and control (table 1:17)

School level	Total	Number of students enrolled			
		Less than 100	100–299	300–499	500 or more
					Public schools, 1984-85
All schools*	78,786	5,587	18,729	25,199	29,271
Elementary	55,022	—	13,629	20,449	16,539
Secondary	19,337	—	3,314	3,333	11,907
Combined	4,427	—	1,786	1,417	825
					Private schools, 1985-86
All schools*	22,689	6,194	10,058	3,741	2,696
Elementary	15,303	4,029	7,535	2,516	1,223
Secondary	2,437	—	650	603	958
Combined	4,949	1,939	1,873	622	515

—Too few cases for a reliable estimate.
*Excludes special education, alternative and vocational/technical schools. Elementary schools contain no grade higher than 8. Secondary schools contain no grade lower than 7. Combined schools contain all other grade spans, such as K-12 or ungraded.

SOURCE: U.S. Department of Education, Center for Education Statistics, 1985–86 Private School Survey and 1985 Public School Survey, unpublished tabulations.

Technical note 1:17—Pupil/teacher ratios

The analysis for this indicator was based on tabulated data from the Center for Statistics' 1985–86 Private School Survey and 1985 Public School Survey. These data consisted of cell means, standard errors, and unweighted cell sizes. An analysis of variance was performed on these aggregate data, with each cell mean-weighted by its unweighted cell size. Because cell frequencies were not equal, type III (or unique) sums of squares were used in testing each effect (see Freund, R.J. & Littell, R.C., 1981).† Furthermore, cell sizes for schools with less than 100 students were too small to provide statistically reliable estimates and so were not included in this analysis. The results of this analysis are shown below:

Source	SS	DF	MS	F
Control	0.4	1	0.4	0.01
Level	13,143.3	2	6,571.6	*150.56
Size	7,790.3	2	3,895.2	*89.29
Control by level	998.0	2	499.0	*11.43
Control by size	137.7	2	68.9	1.58
Level by size	227.1	4	56.8	1.30
Control by level by size	1,116.6	4	279.2	*6.39
Within cell	–	3,009	43.7	–

–Not applicable.
*Significant at 0.05 level.

Two groups of post hoc tests were conducted. The first partitioned level of school into two contrasts: 1) the difference between mean ratios for elementary vs. secondary and combined schools; and 2) the difference between mean ratios for secondary schools vs. combined schools. Elementary schools had significantly higher pupil/teacher ratios than did secondary and combined schools ($F_{1,3009}=298.6$, $p<.01$), and secondary schools had significantly higher ratios than did combined schools ($F_{1,3009}=8.79$, $p<.01$). The second group of post hoc tests examined the simple interaction effect of size by level at each value of control (public or private). These tests indicated that there was a significant interaction between level and size for public schools ($F_{4,3009}=4.61$, $p<.01$) and for private schools ($F_{4,3009}=4.36$, $p<.01$), indicating that the effect of level on pupil/teacher ratios varied with different degrees of school size for both public and private schools.

†Freund, R.J. and Littell, R.C. (1981). *SAS for Linear Models.* Cary, N.C.: SAS Institute, Inc.

Table 1:19-1

Distribution of bachelor's degree recipients who taught 1 year after graduation, by major field: 1981 and 1985

Major field	Year teaching after graduation	
	1981	1985
	Percentage distribution	
Total	100	100
Technical/professional fields	84	75
Engineering	(*)	(*)
Business/management	(*)	1
Health	1	1
Education	82	72
Public affairs/social services	(*)	(*)
Arts and sciences	14	17
Biological sciences	2	2
Physical sciences/mathematics	1	1
Psychology	2	2
Social sciences	3	5
Humanities	6	7
Other	2	8
Communications	0	1
Miscellaneous	2	7

* Less than 0.5 percent.

NOTE: Detail may not add to totals due to rounding.

SOURCE: U.S. Department of Education, Center for Education Statistics, Recent College Graduates Survey, various years, unpublished tabulating.

Table 1:19-2

Coefficients of variation for employment of recent college graduates as teachers (table 1:19-1)

Major field of study	Percentage of bachelor's recipients who taught
Technical/professional fields	2.9
Business and management	32.7
Engineering	—
Education	2.4
Health professions	28.6
Public affairs/social services	—
Arts and sciences	6.5
Biological sciences	24.1
Mathematics and physical sciences	21.1
Social sciences	15.1
Humanities	8.2
Psychology	23.6
Other fields	20.5

—Number in sample too small to yield a reliable estimate.

NOTE: The coefficient of variation of an estimate is the standard error of an estimate expressed as a percent of the estimate. A standard error may be used to establish a confidence interval around an estimate. Multiplying the standard error of an estimate by 1.96 establishes the 0.95 confidence interval.

SOURCE: U.S. Department of Education, Center for Education Statistics, *OERI Bulletin*, "New Teachers in the Job Market: 1985 Update," 1987.

Table 1:22-1

Standard errors for percentage of public and private school teachers, by sex, race/ethnicity, highest degree, and years of teaching experience (table 1:22)

Teacher characteristic	Public schools, 1984–85	Private schools, 1985–86			
		Total	Catholic	Other religious	Nonsectarian
	Total number of teachers (in thousands)				
	1,989	348	168	103	77
	Standard errors for percentages				
Sex					
Male	0.6	3.8	4.5	3.7	4.1
Female	.6	3.8	4.5	3.7	4.1
Race/ethnicity					
White, non-Hispanic	.5	2.2	2.4	2.1	8.2
Black, non-Hispanic	.4	1.4	1.2	1.3	5.9
Other[1]	.3	1.1	1.4	1.1	.9
Highest degree					
Less than bachelor's	.1	1.1	.8	3.2	1.0
Bachelor's	.7	4.4	4.4	5.9	6.0
More than bachelor's	.7	5.0	4.6	6.6	6.0
Years of full-time teaching experience[2]					
Less than 5	.5	5.1	2.9	8.0	8.8
5–9	.6	1.7	1.0	3.8	5.7
10 or more	.7	4.7	2.9	6.2	9.2

[1]Includes Hispanic, American Indian or Alaskan Native, and Asian or Pacific Islander.

[2]Includes full-time teaching for less than the entire school year for some private school teachers.

NOTE: Data cover only full-time school staff with teaching as a primary assignment. Detail may not add to total due to rounding.

SOURCE: U.S. Department of Education, Center for Education Statistics, 1985 Public School Survey and 1985–86 Private School Survey, unpublished tabulations.

Table 1:23-1

Standard errors for average number of hours teachers spent per week on school-related activities within and outside required school hours (table 1:23)

School-related activities	Public school teachers, 1984–85	Private school teachers, 1985–86
Total number of teachers (in thousands)	1,989	348
	Standard errors for average hours during most recent week (*)	
Total	0.2	0.3
During required school hours	.1	.2
Classroom teaching	.1	.4
Outside of required school hours	.1	.2

* Reported by public and private school teachers. Data cover full-time school staff whose primary assignment was teaching.

NOTE: Detail may not add to totals due to rounding.

SOURCE: U.S. Department of Education, Center for Education Statistics, *ED-TABS: The 1985 Public School Survey, Early Tabulations* (November, 1986) and *Private Schools and Private School Teachers: Final Report of the 1985–86 Private School Study*, 1987.

Table 1:24-1

Public and private school K–12 enrollment: 1970–85

Year (fall)	Public school			Private school			Private school enrollment as a percent of total enrollment		
	Total K–12	K–8	9–12	Total K–12	K–8	9–12	Total K–12	K–8	9–12
	Enrollment (in thousands)						Percent		
1970	46,193	32,648	13,545	5,655	4,485	1,170	10.9	12.1	8.0
1971	46,575	32,518	14,057	5,378	4,252	1,126	10.4	11.6	7.4
1972	45,344	31,329	14,015	5,203	4,048	1,155	10.3	11.4	7.6
1973	44,945	30,783	14,162	4,945	3,761	1,184	9.9	10.9	7.7
1974	44,957	30,682	14,275	4,867	3,695	1,172	9.8	10.7	7.6
1975	44,520	30,017	14,503	5,001	3,821	1,180	10.1	11.3	7.5
1976	44,201	29,660	14,541	4,804	3,603	1,201	9.8	10.8	7.6
1977	43,153	28,648	14,505	5,025	3,777	1,248	10.4	11.6	7.9
1978	41,976	27,745	14,231	4,978	3,734	1,244	10.6	11.9	8.0
1979	41,343	27,349	13,994	4,663	3,541	1,122	10.1	11.5	7.4
1980	—	27,088	—	—	3,537	—	—	11.5	—
1981	40,897	27,374	13,523	4,701	3,582	1,119	10.3	11.6	7.6
1982	40,131	27,127	13,004	4,702	3,584	1,118	10.5	11.7	7.9
1983	39,701	26,909	12,792	4,868	3,650	1,218	10.9	11.9	8.7
1984	39,794	27,073	12,721	*4,306	*3,249	*1,057	*9.8	*10.7	*7.7
1985	39,788	27,024	12,764	4,872	3,657	1,215	10.9	11.9	8.7

–Not available.

*There was an unexplained drop in the number and proportion of private school students in 1984, according to the Bureau of the Census. However, the 1984 data appear to be an anomaly, since the 1985 figures for private school students are very similar to those for 1983 and are consistent with the trend for 1979 to 1983.

SOURCE: U.S. Department of Commerce, Bureau of the Census, Current Population Reports, *School Enrollment-Social and Economic Characteristics of Students: October 1985 (Advance Report)* (Series P-20 No. 409) and *October 1984 (Advance Report)* (Series P-20, No. 404).

Table 1:24-2

Standard errors for public and private school K–12 enrollment: 1970–85 (table 1:24-1)

Year (fall)	Public school			Private school			Private school enrollment as a percent of total enrollment		
	Total K–12	K–8	9–12	Total K–12	K–8	9–12	Total K–12	K–8	9–12
	Enrollment (in thousands)								
1970	240	95	151	104	96	48	0.2	0.3	0.3
1971	241	96	153	102	94	47	.2	.3	.3
1972	239	106	153	100	92	48	.2	.3	.3
1973	239	110	154	98	89	48	.2	.3	.3
1974	239	111	154	97	88	48	.2	.3	.3
1975	238	115	155	98	90	48	.2	.3	.3
1976	238	[illegible]	155	96	87	49	.2	.3	.3
1977	237	123	155	98	89	50	.2	.3	.3
1978	235	127	154	98	89	50	.2	.3	.3
1979	234	129	153	95	87	47	.2	.3	.3
1980	—	130	—	—	87	—	—	.3	—
1981	251	138	162	102	93	52	.2	.3	.3
1982	249	140	164	102	93	51	.2	.3	.3
1983	249	141	164	104	94	51	.2	.3	.4
1984	249	140	165	98	89	52	.2	.3	.3
1985	249	140	165	104	94	52	.2	.3	.4

—Not available.

SOURCE: U.S. Department of Commerce, Bureau of the Census, Current Population Reports, *School Enrollment—Social and Economic Characteristics of Students: October 1985 (Advance Report)* (Series P-20, No. 409) and *October 1984 (Advance Report)* Series P-20, No. 404).

Table 1:26-1

Standard errors for school enrollment rates by selected age groups (table 1:26)

Year	Age		
	3–4	5–6	16–17
1985	0.9	0.3	0.5
1984	0.9	0.4	0.5
1983	0.8	0.4	0.5
1982	0.8	0.4	0.5
1981	0.8	0.4	0.5
1980	0.9	0.4	0.5
1979	0.9	0.4	0.5
1978	0.9	0.4	0.5
1977	0.9	0.3	0.5
1976	0.8	0.4	0.5
1975	0.8	0.4	0.5
1974	0.8	0.4	0.5

SOURCE: U.S. Department of Commerce, Bureau of the Census. Current Population Reports, Series P–20 (various years), and unpublished tabulations.

Table 1:27-1

Enrollment in the Nation's 20 largest public school districts, by race/ethnicity: Fall 1976 and 1984

District*	Total	White, non-Hispanic	Minority				
			Total minority	Black, non-Hispanic	Hispanic	Asian/Pacific Islander	American Indian/Alaskan Native
			Percent				
Fall 1976							
New York City, NY	100.0	30.5	69.5	37.9	29.0	2.6	0.0
Los Angeles, CA	100.0	36.5	63.5	24.5	32.2	5.9	0.9
Chicago, IL	100.0	24.7	75.3	59.6	14.1	1.4	0.2
Dade County (Miami), FL	100.0	41.0	59.0	27.9	30.7	0.4	0.1
Philadelphia, PA	100.0	31.6	68.4	62.4	5.5	0.5	0.0
Detroit, MI	100.0	18.6	81.4	79.3	1.7	0.3	0.1
Houston, TX	100.0	34.0	66.0	43.1	21.9	0.8	0.1
Hawaii	100.0	20.5	79.5	1.2	6.3	71.7	0.4
Fairfax County, VA	100.0	92.1	7.9	4.6	1.2	2.1	0.1
Dallas, TX	100.0	38.1	61.9	46.7	14.2	0.6	0.3
Broward County (Ft. Lauderdale), FL	100.0	75.3	24.7	21.5	2.7	0.3	0.1
Baltimore, MD	100.0	24.3	75.7	75.0	0.1	0.4	0.2
Hillsborough County (Tampa), FL	100.0	75.6	24.4	19.6	4.3	0.4	0.1
San Diego, CA	100.0	65.8	34.2	14.5	14.0	5.4	0.3
Prince Georges County, MD	100.0	59.8	40.2	37.5	0.7	1.8	0.2
Memphis, TN	100.0	29.4	70.6	70.6	0.0	0.0	0.0
Duval County (Jacksonville), FL	100.0	65.3	34.7	33.3	0.4	0.9	0.1
Jefferson County (Louisville), KY	100.0	74.8	25.2	24.7	0.1	0.3	0.0
Montgomery County, MD	100.0	83.5	16.5	9.5	3.1	3.3	0.6
Clark County (Las Vegas), NV	100.0	79.0	21.0	14.8	4.4	1.3	0.4
Fall 1984							
New York City, NY	100.0	22.8	77.2	38.2	33.2	5.8	0.1
Los Angeles, CA	100.0	19.7	80.3	20.2	52.2	7.7	0.2
Chicago, IL	100.0	13.1	86.9	62.3	21.7	2.9	0.1
Dade County (Miami), FL	100.0	26.6	73.4	32.4	40.0	1.1	0.0
Philadelphia, PA	100.0	25.4	74.6	63.4	8.5	2.5	0.2
Detroit, MI	100.0	10.4	89.6	87.4	1.7	0.4	0.2
Houston, TX	100.0	19.0	81.0	43.6	34.2	3.1	0.1
Hawaii	100.0	23.1	76.9	1.9	2.1	72.7	0.3
Fairfax County, VA	100.0	81.0	19.0	8.2	3.1	7.6	0.1
Dallas, TX	100.0	23.3	76.7	49.6	24.9	1.8	0.4
Broward County (Ft. Lauderdale), FL	100.0	67.4	32.6	26.2	5.1	1.1	0.2
Baltimore, MD	100.0	19.8	80.2	79.3	0.2	0.6	0.2
Hillsborough County (Tampa), FL	100.0	72.2	27.8	20.6	5.7	1.0	0.4
San Diego, CA	100.0	47.7	52.3	16.0	19.9	16.0	0.3
Prince Georges County, MD	100.0	37.3	62.7	57.6	1.4	3.5	0.2
Memphis, TN	100.0	21.3	78.7	77.9	0.0	0.7	0.0
Duval County (Jacksonville), FL	100.0	60.8	39.2	36.5	0.8	1.9	0.1
Jefferson County (Louisville), KY	100.0	69.0	31.0	30.1	0.2	0.7	0.0
Montgomery County, MD	100.0	71.3	28.7	14.5	5.3	8.8	0.1
Clark County (Las Vegas), NV	100.0	74.1	25.9	15.5	6.6	3.2	0.6

*Ranked on the basis of 1984 enrollment.

SOURCE: U.S. Department of Education, Office for Civil Rights, *Directory of Elementary and Secondary School Districts, and Schools in Selected School Districts: School Year 1976–77*; and 1984 Elementary and Secondary School Civil Rights Survey, unpublished tabulations.

Table 1:27-2

Public school enrollment in deciles, by district size, and percent of students by race/ethnicity in each decile: Fall 1984

Decile	Size of district (number of students)	Percent of students in decile*						Districts in decile	
		Total	White, non-Hispanic	All minority	Black, non-Hispanic	Hispanic	Asian/Pacific Islander	Number	Percent
Total	—	100.0	100.0	100.0	100.0	100.0	100.0	16,453	100.0
1	1 to 1,173	10.1	12.5	3.2	2.3	5.3	1.9	9,758	59.3
2	1,175 to 2,125	10.1	12.3	4.5	3.8	5.9	3.6	2,497	15.2
3	2,126 to 3,141	10.1	11.9	5.0	5.0	4.8	5.7	1,515	9.2
4	3,142 to 4,650	10.1	11.4	6.6	7.2	5.6	5.8	1,029	6.3
5	4,653 to 7,174	10.1	11.2	7.4	7.4	7.6	6.8	695	4.2
6	7,220 to 10,808	10.1	10.5	9.0	8.6	9.6	9.7	454	2.8
7	10,877 to 19,017	10.1	10.2	9.6	7.9	12.1	11.1	282	1.7
8	19,166 to 40,459	10.0	8.9	13.1	13.9	11.8	12.9	144	0.9
9	40,460 to 106,517	9.9	7.4	16.5	20.3	10.8	13.7	64	0.4
10	108,302 to 931,768	9.6	3.6	25.1	23.7	26.6	28.9	15	0.1

—Not applicable.

*The sample of American Indians/Alaskan Natives was insufficient for estimates by decile.

NOTE: This table divides public school students into 10 deciles, each with approximately 10 percent of all students. This table can be read as follows: 10.1 percent of all students are in the smallest public school districts, those with up to 1,173 students. These districts contain 12.5 percent of all white students and 2.3 percent of all black students; 9,758 districts are in this decile (59.3 percent of all districts). The largest decile, districts with over 108,302 students, contain 9.6 percent of all students, 3.6 percent of all white students and 25.1 percent of all minority students; 15 districts are in this decile.

SOURCE: U.S. Department of Education, Office for Civil Rights, 1984 Elementary and Secondary School Civil Rights Survey (Center for Education Statistics, special tabulations).

Table 1:27-3

Enrollment in public elementary and secondary schools, by race/ethnicity and by State: Fall 1984

State	Total		White, non-Hispanic		Black, non-Hispanic		Hispanic		Asian or Pacific Islander		American Indian/ Alaskan Native	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
United States	39,451,897	100.0	28,106,295	71.2	6,388,670	16.2	3,598,511	9.1	994,108	2.5	364,313	0.9
Alabama	693,070	100.0	442,927	63.9	238,305	34.5	828	0.1	2,270	0.3	7,740	1.1
Alaska	110,100	100.0	81,975	74.5	3,773	3.4	1,557	1.4	2,638	2.4	20,157	18.3
Arizona	516,613	100.0	322,010	62.3	19,381	3.8	111,126	21.5	5,826	1.1	58,270	11.3
Arkansas	477,549	100.0	352,785	73.9	120,674	25.3	1,392	.3	2,251	.5	447	.1
California	4,405,616	100.0	2,288,976	52.0	445,830	10.1	1,285,907	29.2	357,510	8.1	27,393	.6
Colorado	494,690	100.0	378,631	76.5	25,029	5.1	77,499	15.7	10,546	2.1	2,985	.6
Connecticut	553,773	100.0	450,661	81.4	57,015	10.3	37,391	6.8	7,622	1.4	1,084	.2
Delaware	98,115	100.0	69,404	70.7	25,290	25.8	2,089	2.1	1,207	1.2	125	.1
District of Columbia	83,231	100.0	3,152	3.8	76,960	92.5	2,380	2.9	705	.8	34	(*)
Florida	1,606,364	100.0	1,087,108	67.7	370,412	23.1	130,272	8.1	16,663	1.0	1,909	.1
Georgia	931,928	100.0	587,046	63.0	333,689	35.8	3,421	.4	7,354	.8	418	(*)
Hawaii	170,472	100.0	39,392	23.1	3,154	1.9	3,569	2.1	123,925	72.7	432	.3
Idaho	186,437	100.0	174,313	93.5	725	.4	7,085	3.8	1,761	.9	2,553	1.4
Illinois	1,670,740	100.0	1,081,163	64.7	415,072	24.8	133,995	8.0	38,954	2.3	1,556	.1
Indiana	1,073,575	100.0	932,908	86.9	115,123	10.7	18,435	1.7	5,957	.6	1,152	.1
Iowa	453,241	100.0	435,172	96.0	8,094	1.8	4,554	1.0	4,345	1.0	1,076	.2
Kansas	508,918	100.0	448,343	88.1	34,587	6.8	14,982	2.9	7,553	1.5	3,453	.7
Kentucky	577,630	100.0	513,705	88.9	61,483	10.6	579	.1	1,757	.3	106	(*)
Louisiana	763,294	100.0	423,822	55.5	324,285	42.5	6,352	.8	8,060	1.1	775	.1
Maine	200,454	100.0	197,803	98.7	739	.4	381	.2	1,211	.6	320	.2
Maryland	502,435	100.0	292,354	58.2	186,995	37.2	7,312	1.5	14,968	3.0	806	.2
Massachusetts	763,017	100.0	660,090	86.5	48,405	6.3	38,143	5.0	15,626	2.0	753	.1
Michigan	1,586,176	100.0	1,260,867	79.5	264,887	16.7	30,769	1.9	13,078	.8	16,575	1.0
Minnesota	735,185	100.0	686,640	93.4	17,310	2.4	6,344	.9	15,059	2.0	9,832	1.3
Mississippi	385,943	100.0	190,182	49.3	194,624	50.4	260	.1	564	.1	313	.1
Missouri	670,000	100.0	550,715	82.2	108,632	16.2	5,389	.8	4,623	.7	641	.1
Montana	165,731	100.0	141,487	85.4	539	.3	1,639	1.0	825	.5	21,241	12.8
Nebraska	314,890	100.0	291,187	92.5	13,475	4.3	6,300	2.0	2,446	.8	1,482	.5
Nevada	150,838	100.0	118,076	78.3	14,930	9.9	9,978	6.6	4,318	2.9	3,536	2.3
New Hampshire	140,812	100.0	138,477	98.3	861	.6	588	.4	831	.6	55	(*)
New Jersey	1,256,067	100.0	876,058	69.7	236,418	18.8	110,221	8.8	32,471	2.6	899	.1
New Mexico	275,386	100.0	123,743	44.9	5,983	2.2	119,652	43.4	1,951	.7	24,057	8.7
New York	2,661,253	100.0	1,714,668	64.4	496,781	18.7	362,158	13.6	84,612	3.2	3,034	.1
North Carolina	1,171,378	100.0	776,036	66.2	351,982	30.0	2,936	.3	6,956	.6	33,468	2.9
North Dakota	122,405	100.0	113,130	92.4	646	.5	635	.5	905	.7	7,089	5.8
Ohio	1,675,794	100.0	1,403,921	83.8	241,880	14.4	17,681	1.1	10,368	.6	1,944	.1
Oklahoma	557,257	100.0	425,866	76.4	55,018	9.9	10,942	2.0	6,486	1.2	58,945	10.6
Oregon	511,344	100.0	462,744	90.5	10,577	2.1	17,898	3.5	13,779	2.7	6,346	1.2
Pennsylvania	1,919,650	100.0	1,623,344	84.6	242,491	12.6	30,632	1.6	21,688	1.1	1,495	.1
Rhode Island	149,881	100.0	132,679	88.5	8,174	5.5	5,628	3.8	2,954	2.0	446	.3
South Carolina	646,112	100.0	378,335	58.6	262,363	40.6	1,146	.2	3,058	.5	1,210	.2
South Dakota	126,037	100.0	116,605	92.5	573	.5	453	.4	861	.7	7,545	6.0
Tennessee	866,528	100.0	680,176	78.5	180,714	20.9	1,036	.1	4,301	.5	301	(*)
Texas	3,193,934	100.0	1,807,962	56.6	445,189	13.9	891,266	27.9	45,956	1.4	3,561	.1
Utah	437,389	100.0	408,528	93.4	2,246	.5	14,523	3.3	7,811	1.8	4,281	1.0
Vermont	88,541	100.0	87,566	98.9	354	.4	96	.1	433	.5	92	.1
Virginia	919,024	100.0	665,198	72.4	218,589	23.8	10,222	1.1	24,195	2.6	820	.1
Washington	761,597	100.0	651,362	85.5	28,688	3.8	32,396	4.3	35,598	4.7	13,553	1.8
West Virginia	316,147	100.0	301,471	95.4	13,163	4.2	344	.1	1,099	.3	70	(*)
Wisconsin	711,053	100.0	630,364	88.7	54,758	7.7	12,136	1.7	7,533	1.1	6,262	.9
Wyoming	94,283	100.0	85,168	90.3	805	.9	5,994	6.4	640	.7	1,676	1.8

*Less than 0.05 percent.

NOTE: Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, Office for Civil Rights, data from the "1984 State Summaries of Elementary and Secondary School Civil Rights Survey" (October 1986).

Table 1:27-4

Total projected and reported estimates of enrollment in public school districts, and percent standard deviations, by race/ethnicity: 1984 (table 1:27)

Item	Total	White, non-Hispanic	Black, non-Hispanic	Hispanic	Asian/Pacific Islander	American Indian/Alaskan Native
			Number			
Reported in sampled districts	19,351,480	11,197,018	4,744,925	2,557,777	706,429	145,331
Estimated national total	39,451,897	28,106,295	6,388,670	3,598,511	994,108	364,313
			Percent			
Standard deviation	2.0	2.3	1.9	3.6	2.9	9.2

NOTE: One standard deviation is equal to the "percent standard deviation" times the estimated number. The 95 percent confidence interval is 1.96 times one standard deviation.

SOURCE: U.S. Department of Education, Office for Civil Rights, "1984 Elementary and Secondary School Civil Rights Survey," unpublished tabulations.

Table 1:28-1

Number of public elementary and secondary school students served annually in special education programs and percent of total public school enrollment: 1978 and 1984

Type of handicap	1978		1984	
	Number of students (in thousands)[1]	As a percent of total enrollment[2]	Number of students (in thousands)[1]	As a percent of total enrollment[2]
All conditions	3,869	9.1	4,315	11.0
Specific learning disabled	1,130	2.7	1,832	4.7
Speech or language impaired	1,214	2.9	1,126	2.9
Mentally retarded	901	2.1	694	1.8
Seriously emotionally disturbed	300	.7	37?	1.0
Hard of hearing and deaf	85	.2	69	.2
Orthopedically handicapped	70	.2	56	.1
Other health impaired	105	.3	68	.2
Visually handicapped	3?	.1	28	.1
Multihandicapped	50	.1	69	.2
Deaf-blind	2	(3)	2	(3)

[1]Child counts are based on reports from the 50 States and District of Columbia, and they represent children 0–20 years old served under Chapter 1 of the Education Consolidation Improvement Act/State Operated Programs (ECIA/SOP) and children 3–21 years old served under the Education for the Handicapped Act (EHA-B). ECIA/SOP is a complementary program to EHA-B that provides funds for handicapped children who are or have been in State-operated programs.

[2]Percentages of total enrollments are based on the total annual enrollment of U.S. public schools, kindergarten through 12th grade, including a relatively small number of prekindergarten students. The 1984 percentages of total enrollment presented here are slightly different than those presented in the annual report, because the total enrollment figure used to figure the percentages has been updated by CES.

[3]Less than .05 percent.

NOTE: Discrepancies exist between the data collected by the Office for Civil Rights (OCR) shown in Indicator table 1:28 and the data in this table from the Office of Special Education and Rehabilitative Services (OSERS). The discrepancies between the two tables exist for a variety of reasons: the data are drawn from two different types of surveys (a universe count obtained by OSERS as compared to a sample survey obtained by OCR); different labeling of categories (OCR uses two categories of mental retardation, whereas OSERS only uses one); the use of different enrollment figures (OSERS uses CES data obtained by requesting a universe count from the States, whereas OCR uses estimates based on their own sample survey); and the use of different populations served (OCR only counts special education students served in public schools, kindergarten through grade 12, whereas OSERS counts special education students 3–21 years old in public schools and private schools, if paid for by the local education agency, and students 0–20 years old in State-operated programs).

SOURCE: U.S. Department of Education, Office of Special Education and Rehabilitative Services, *Fifth Annual Report to Congress on the Implementation of Public Law 94-142*, Appendix 2, table F(1983); *Ninth Annual Report to Congress on the Implementation of Public Law 94-142*, table 2 and Appendix EH5(1987), and unpublished tabulations.

Table 1:29-1

Standard errors for average reading proficiency of 9-, 13-, and 17-year-old students, by amount of reading materials in the home and television viewing time: 1984 (table 1:29)

Age and hours of television viewed per day	Overall	Reading materials in the home*	
		Few	Many
9-year-olds	0.9		
0-2 hours		2.4	1.9
6+ hours		1.9	2.3
13-year-olds	.6		
0-2 hours		2.9	1.2
6+ hours		3.2	2.4
17-year-olds	.9		
0-2 hours		2.5	0.9
6+ hours		4.7	3.5

SOURCE: National Assessment of Educational Progress, 1983-84 Assessment of Reading (Center for Education Statistics, special tabulations).

Table 1:30-1

Standard errors for incidence of student infractions in public secondary schools, by selected school characteristics: 1983–84 (table 1:30)

School characteristic	Student caught selling illegal drugs at school		Theft of personal item over $10 value reported by student		Law violation reported by school authorities	
	Percent of schools	Incidence per 100 students[1]	Percent of schools	Incidence per 100 students[1]	Percent of schools	Incidence per 100 students[1]
Total	1.9	.03	1.7	.09	1.9	.07
Grade level[2]						
Senior high	2.3	—	—	.13	—	—
Junior high	2.9	—	—	.06	—	—
School size						
Less than 400	—	—	4.3	.24	4.5	.20
400–999	—	—	—	—	—	.06
1000 or more	—	—	1.6	.08	2.2	.05
Metropolitan status						
Rural	—	.02	3.4	—	2.9	.40
Suburban	—	—	—	—	—	.07
Urban	—	.18	3.1	—	3.1	.08

—Not available.

[1] Based on all schools including those that reported no occurrences.

[2] Some schools have both elementary and secondary grades. These schools are not listed separately because their number is small; they are included in the total and in analyses with other school characteristics.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, Survey of School Discipline Policies and Practices, 1985

Table 1:32-1

Standard errors for school climate in public and Catholic high schools: 1984 (table 1:32)

Components of climate	Teachers in public schools	Teachers in Catholic schools
Principal leadership	0.5	2.0
Staff cooperation	0.5	1.9
Student behavior	0.5	1.8
Teacher control over school and classroom policy	0.5	1.6
Teacher morale	0.5	1.4

SOURCE: U.S. Department of Education, National Institute of Education, Consortium for the Study of Effective Schools, High School and Beyond Administrator and Teacher Survey, 1984, unpublished tabulations.

Technical note 1:32—School climate in public and Catholic high schools

The school climate indicator was derived from data drawn from a survey of teachers at High School and Beyond (HS&B) schools, conducted in 1984, with funding from the former National Institute of Education (NIE), now the Office of Research (OR) in the Department of Education's Office of Educational Research and Improvement.

The information that follows describes in detail how the climate scales described in the indicator were derived.

Survey: The data described in this report are from a survey of secondary school teachers conducted by the Consortium for the Study of Effective Schools, a group of five educational research and development centers funded by the Office of Educational Research and Improvement, U.S. Department of Education. The sample consisted of 538 secondary schools, both public and private, which participated in the High School and Beyond study. When properly weighted, the schools represent the population of 1980 U.S. high schools with 10th and/or 12th grades that were still in existence in the 1983-84 academic year.

A random sample of up to 30 teachers (defined as full-time teaching staff spending at least 50 percent of their time teaching in classrooms) was selected from each sampled school. In schools with less than 30 eligible teachers, all such teachers were included in the sample.

The response rates for both schools and teachers were quite high. Of the schools selected for the study, 90 percent agreed to participate. In the participating schools, 85.8 percent of the teachers sampled completed questionnaires.

The teacher questionnaire consisted of 10 pages of questions covering teacher attitudes, classroom and other teaching activities, school characteristics, and background information. Although not every teacher responded to every question, 10,382 teachers completed at least 50 percent of the questionnaire.

Methodology: The scales used in this analysis derive from a data reduction procedure involving factor analysis and item analyses. The first step involved selection of a suitable set of items from the teacher questionnaire. A pool of 60 items, representing teacher reports of their influence over school and classroom practices, their perceptions of the school environment, their attitudes toward teaching and the school, and their reports of classroom practices, was selected.

The pool of 60 items was subjected to a principal components analysis with varimax rotation. Although 13 eigenvalues of the correlation matrix exceeded unity, only 8 factors were extracted. The eight extracted factors represented 43.5 percent of the total variance in the correlation matrix. Items were retained for further analysis on the basis of the rotated factor pattern. Items with factor loadings greater than .40 in absolute value were kept, while items with factor loadings less than or equal to .40 in absolute value were discarded.

The first factor, labeled principal leadership, comprised 14 items with factor loadings greater than the threshold of .40. The second factor, labeled student behavior, had 10 items. The third factor, staff cooperation, included eight items with sufficiently high loadings on the factor. The fourth factor, teacher influence over school policy, comprised four items. The fifth factor was conceptually quite similar to the fourth. Labeled teacher influence over classroom practices, the factor had five items with loadings exceeding .40. The sixth factor, teacher morale, included four items. The seventh factor, academic orientation, consisted of three items. The eighth factor, teacher responsibility for school-wide discipline, had just two items with factor loadings greater than .40.

Based on the similarity in content of the items in factors four and five, these items were combined to form a single factor, labeled teacher influence over school and classroom policy. The sets of items loading on each factor were summed to form scales. Homogeneity reliability procedures (i.e., Cronbach's alpha) were then employed to select the subset of items loading on each factor that scaled best. Unit weighting of items was used throughout. A stepwise procedure, deleting one at a time items whose presence lowered the scale reliability, was used. Items were pruned until the deletion of any item from a scale lowered the scale reliability.

As a result of the item pruning, the teacher responsibility for school discipline and academic orientation scales each were left with two items. Within both of these scales the items did not correlate very highly, and the items in the academic orientation scale appeared to be tapping different constructs. Hence, these two scales were discarded from further analyses.

The resulting scales had moderate reliabilities that were generally suitable for the intended analyses, especially given the ad hoc item pool. The principal leadership scale, which consisted of 14 items, had an alpha reliability of .92. The teacher control over school and classroom policy scale, comprised of nine items, had an alpha reliability of .80. Staff cooperation, an eight item scale, had a reliability of .84. The seven-item student behavior scale had an alpha reliability of .77. The teacher morale scale, consisting of four items, had an alpha reliability of .67.

For ease of presentation all of the items in each scale were dichotomized into categories representing positive or negative judgments about the school climate attributes. A teacher's response to each question may represent either a positive or negative judgment about the climate. For instance, agreeing with the Teacher Morale item "I usually look forward to each working day at school" suggests a positive climate, while disagreeing suggests a negative climate. The cutting points for positive or negative climates were not established by the data, but rather had to be imposed by the investigator. While the cutting points for positive and negative are subjective, for most items there probably is broad agreement about which responses indicate a positive climate and which do not. The responses to each item in each scale were thus scored as either positive or negative, based on judgments about what constitutes a positive response. These judgments are reproduced below, along with the item wording.

Once a value for each item in the scales was established the next task was to assign a positive or negative value to the scales. It probably is too rigid a criterion to demand that *all* items in a scale have positive values for the scale to be scored positively; at the same time, however, a positive climate scale should represent predominantly positive responses. Hence, a climate scale is deemed positive if at least two-thirds of the items in the scale have positive responses.

All analyses were conducted both with the simplified scale scoring and with the scales in their original metrics. The results and implications were virtually identical, regardless of which scale scoring scheme was used. The item wording and scoring of the scale items appear below.

Principal Leadership Scale

Response categories for all items range from 1 (strongly disagree) to 6 (strongly agree). For the first 12 items, categories 4 through 6 were judged positive, while categories 1 through 3 were judged negative.

The principal deals effectively with pressures from outside the school that might interfere with my teaching.

The principal sets priorities, makes plans, and sees that they are carried out.

Goals and priorities for the school are clear.

Staff members are recognized for a job well done.

Staff are involved in making decisions that affect them.

The principal knows what kind of school he/she wants and has communicated it to the staff.

This school's administration knows the problems faced by the staff.

In this school I am encouraged to experiment with my teaching.

The school administration's behavior toward the staff is supportive and encouraging.

In this school the teachers and the administration are in close agreement on school discipline policy.

The principal lets staff members know what is expected of them.

The principal is interested in innovation and new ideas.

For the last two items, categories 1 through 3 were judged positive, while categories 4 through 6 were judged negative.

The principal does a poor job of getting resources for this school.

The principal seldom consults with staff members before he/she makes decisions that affect us.

Staff Cooperation Scale

Response categories for all the items range from 1 (strongly disagree) to 6 (strongly agree). Categories 4 through 6 were judged positive, while categories 1 through 3 were judged negative for the first seven items.

> You can count on most staff members to help out anywhere, anytime—even though it may not be part of their official assignment.
>
> Most of my colleagues share my beliefs and values about what the central mission of the school should be.
>
> I feel accepted and respected as a colleague by most staff members.
>
> Teachers in this school are continually learning and seeking new ideas.
>
> There is a great deal of cooperative effort among staff members.
>
> Staff members maintain high standards of performance for themselves.
>
> This school seems like a big family; everyone is so close and cordial.

For the last item (on school spirit), categories 1 through 3 were judged positive, while categories 4 through 6 were judged negative.

> Staff members in this school generally don't have much school spirit.

Teacher Control Scale

Response categories range from 1 (none) to 6 (a great deal for the first groups of items on school policy; complete control for second group of items on classroom control). Categories 4 through 6 were judged positive, while categories 1 through 3 were judged negative.

> How much influence do teachers have over school policy in each of the areas below?
>
> Determining student behavior codes
>
> Determining the content of inservice programs
>
> Setting policy on grouping students in classes by ability
>
> Establishing the school curriculum

> Using the scale provided, how much control do you feel you have *in your classroom* over each of the following areas of your planning and teaching?
>
> Selecting textbooks and other instructional materials
>
> Selecting content, topics, and skills to be taught
>
> Selecting teaching techniques
>
> Disciplining students
>
> Determining the amount of homework to be assigned

Teacher Morale Scale

Response categories for the first two items range from 1 (strongly disagree) to 6 (strongly agree). Categories 4 through 6 were judged positive, while categories 1 through 3 were judged negative for the first item. For the second item categories 1 through 3 were judged positive, and categories 4 to 6 were judged negative.

> I usually look forward to each working day at school.
>
> I sometimes feel it is a waste of time to try to do my best as a teacher.

For the third item, the response categories "very successful" and "moderately successful" were judged positive, while the categories "slightly successful" and "not successful" were judged negative.

> To what extent do you feel successful in providing the kind of education you would like to provide for most of your students?

For the fourth item, the response categories "all the time" and "most of the time" were judged positive, while the categories "some of the time" and "almost never" were judged negative.

> How much of the time do you feel satisfied with your job in this school?

Table 1:33-1

Sampling tolerances for job satisfaction of public school teachers: 1984–86 (table 1:33)

Item	Teachers in 1984	Teachers in 1985	Teachers in 1986		
			Total	Male	Female
				Number	
Teacher sample	1,981	1,846	1,602	509	1,093
				Percent	
Ever seriously considered leaving					
Yes	—	2	3	4	3
No	—	2	3	4	3
Likely to leave within next 5 years					
Very likely	—	1	2	3	2
Fairly likely	—	1	2	4	2
Not too likely	—	2	2	4	3
Not at all likely	—	2	3	4	3
Likely to leave within next 2 years					
Very likely	—	—	2	3	2
Fairly likely	—	—	2	3	2
Not too likely	—	—	2	3	2
Not at all likely	—	—	2	3	2
Job satisfaction					
Very satisfied	1	—	2	4	3
Somewhat satisfied	2	—	3	4	3
Somewhat dissatisfied	2	—	2	4	2
Very dissatisfied	1	—	2	3	2

—Not available

SOURCE: Metropolitan Life Insurance Company and Louis Harris and Associates, *The American Teacher, 1986.*

Table 1:34-1

Sampling tolerances for percentages from Gallup Polls (tables 1:34, 1:35, 1:36)

	Recommended allowance for sampling error of a percentage						
	Size of sample*						
	1500	1000	750	600	400	200	100
	In percentage points (at 95 in 100 confidence)						
Percentages near 10 ...	2	2	3	4	4	5	7
Percentages near 20 ...	2	3	4	4	5	7	9
Percentages near 30 ...	3	4	4	5	6	8	10
Percentages near 40 ...	3	4	4	5	6	9	11
Percentages near 50 ...	3	4	4	5	6	9	11
Percentages near 60 ...	3	4	4	5	6	9	11
Percentages near 70 ...	3	4	4	5	6	8	10
Percentages near 80 ...	2	3	4	4	5	7	9
Percentages near 90 ...	2	2	3	4	4	5	7

	Recommended allowance for sampling error of the difference			
	Size of sample*			
Size of sample	750	600	400	200
	In percentage points (at 95 in 100 confidence)			
	Percentages near 20 or percentages near 80			
750	5	6	7	8
600	6	6	7	8
400	7	7	7	9
200	8	8	9	10
	Percentages near 50			
750	6	8	8	10
600	8	8	8	11
400	8	8	9	11
200	10	11	11	11

*Sample sizes for Indicators 1:34, 1:35, and 1:36 are described in appendix C, Sources of Data.

SOURCE: *Phi Delta Kappan*, The Gallup Poll of Teachers' Attitudes Toward the Public Schools, October 1984 and January 1985 and the 18th annual Gallup Poll of the Public's Attitudes Toward Education, September 1986.

Table 1:37-1

Standard errors for average years of coursework required for high school graduation in private schools with grade 12: 1985–86 (table 1:37A)

School characteristic	Number of schools with grade 12	Subject area				
		Mathematics	Science	English	Foreign languages	Social studies
		Standard errors				
Total	8,464	0.1	0.1	0.02	0.1	0.1
Orientation						
Catholic	1,764	.1	.1	.01	.2	.1
Other religious	4,399	.2	.1	.03	.2	.1
Nonsectarian	2,301	.2	.1	.02	.1	.2
Type/level*						
Secondary	2,430	.1	.1	.02	.2	.1
Combined	4,046	.2	.1	.04	.2	.1
Other	1,987	.2	.2	.00	.4	.5

*Secondary and combined are regular schools, while other schools are primarily alternative schools. Secondary schools have no grade lower than 7, while combined schools have at least one grade lower than 7.

SOURCE: U.S. Department of Education, Center for Education Statistics, *Private Schools and Private School Teachers: Final Report of the 1985–86* Private School Study, 1987, and unpublished tabulations.

Table 1:37-2

Standard errors for average years of coursework required for high school graduation by public school districts with high schools (table 1:37B)

School year	Subject area[1]			
	Mathematics	Science	English	Social studies
1981–82	0.02	0.02	0.02	0.03
1984–85	.02	.03	.02	.02
1987–88[2]	.02	.02	.02	.02

[1]Standard errors are not available for foreign language coursework.
[2]Expectations as of fall 1985 about requirements for seniors graduating in 1988.

SOURCE: U.S. Department of Education, Center for Education Statistics, "Public High School Graduation Requirements," *OERI Bulletin* 1986, and unpublished tabulations.

Table 1:38-1

Number of courses for high school graduation in 1980 and 1986, year effective, and increase in units required, by State: 1986

Number of units required, 1986		Change 1980–86
22	1989	2
21	1985	2
20	1987	4
	1982	
	(3)	
	1988	
	1986	

—Not applicable.
[1]Effective for the graduating class of this year.
[2]Local boards determine requirements.
[3]No change in requirements.

NOTE: Some States award more than one type of high school diploma, with each type requiring a different number of units.

SOURCE: Education Commission of the States, Department of Research and Information, *Clearinghouse Notes*, "Minimum High School Graduation Course Requirements in the States," November 1985, and unpublished data.

Technical note 2:1—College student achievement: A selected profile

The Office of Research (OR) in the Office for Educational Research and Improvement (OERI) has analyzed changes over two decades in performance on graduate and professional school admissions tests. In the analysis, change is measured against the mean standard deviation for a specific time period. Standard deviation units are a far more accurate way of measuring change in performance over time for these tests than either scores or percentages, principally because (a) no two of these examinations have the same scales, and (b) the standard deviation accounts for the different ranges in scores among the many groups of students who took these examinations over a long period of time.

The four major college graduate examinations with a national data base examined are these: the Law School Admissions Test (LSAT), the Medical College Admissions Test (MCAT), the Graduate Management Admissions Test (GMAT), and the Graduate Record Examination (GRE). While the combination of those taking the LSAT, the MCAT, and the GMAT is greater in number, the GRE scores are more reliable historical measures of student achievement. The GRE battery has remained fairly constant in content and skills coverage, and unlike the LSAT or MCAT, the scales of the various GRE examinations have not undergone radical alteration since their introduction.

However, while the GRE is the best historical measure, there are several aspects of the GRE which make it an imperfect measure of overall college outcomes. These aspects include the following:

Sampling biases: Less than 15 percent of college graduates in any year take the GRE. Those who take them usually plan to attend graduate schools that require or recommend the GRE as part of the admissions application. Others take them as part of their application for specific fellowships. This is a self-selected sample and as such, its scores on a test of general verbal, quantitative, and analytical skills will not reflect the overall quality of undergraduate learning in the United States.

Test content: The GRE General Examinations measure "general learned abilities" such as reading comprehension, quantitative reasoning, and problem-solving. Colleges teach—and students learn—a great deal more than this, specific disciplinary content, for example. Colleges also seek to foster the development of other general learned abilities, such as how to synthesize information and how to be creative, which are not tested in the General Examinations. Thus the results of the GRE do not reflect the full range of student learning in U.S. colleges and universities.

Real gains: The GRE scores do not indicate the extent to which students have improved their general learned abilities between their entrance to and graduation from college. Since the scores of seniors are not statistically controlled by measures of their ability as freshmen, no conclusions can be made about the quality of education that has taken place during the period of their enrollment in college.

Those interested in further information may refer to the Office of Research publication, *The Standardized Test Scores of College Graduates, 1964-1982*, 1985, or contact

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Table 2:2-1

Years of college completed by population 25–34 years old, by race/ethnicity: 1970–86

Year (March)	1 or more years			2 or more years			4 or more years		
	White	Black	Hispanic*	White	Black	Hispanic*	White	Black	Hispanic*
					Percent				
1970	31.2	15.0	—	25.4	11.7	—	16.6	6.1	—
1971	32.8	16.3	—	26.5	12.2	—	17.2	6.3	—
1972	34.8	18.7	—	28.2	13.9	—	18.8	7.9	—
1973	35.5	20.4	—	29.0	14.6	—	19.0	8.3	—
1974	38.7	23.0	18.7	32.0	16.0	13.8	21.0	8.1	5.7
1975	40.4	25.9	19.6	33.2	19.4	13.5	22.2	10.7	7.0
1976	42.7	24.9	20.9	35.0	18.9	14.7	23.5	11.3	7.4
1977	45.1	28.6	21.9	37.3	21.1	15.3	25.0	11.4	6.9
1978	46.1	32.6	22.7	38.1	24.1	16.9	24.8	11.4	8.8
1979	47.0	31.3	23.1	38.7	23.7	17.1	24.9	12.8	7.8
1980	47.2	33.6	23.6	38.9	24.9	17.8	25.4	12.4	8.9
1981	45.9	34.1	24.4	37.8	25.5	17.8	24.3	11.7	8.8
1982	46.2	35.8	23.8	38.4	27.3	18.7	24.9	12.6	9.7
1983	47.3	33.0	24.7	39.5	25.3	19.4	25.5	13.6	10.2
1984	47.1	32.8	26.0	39.1	24.7	19.7	25.5	13.1	10.1
1985	46.8	35.3	25.6	38.7	28.0	19.5	24.8	13.7	10.5
1986	46.6	36.2	24.9	38.9	28.5	19.5	25.1	13.6	9.9

—Not available.
*Hispanic may be of any race.

SOURCE: U.S. Department of Commerce, Bureau of the Census, Current Population Reports, Series P-20, *Educational Attainment in the United States*, various years, and unpublished tabulations from the March Supplement to the Current Population Survey.

Table 2:2-2

Standard errors for years of college completed by population 25–34 years old: 1970–86 (table 2:2)

Year (March)	1 or more years	2 or more years	4 or more years
		Percent	
1970	0.4	0.4	0.3
1971	.4	.4	.3
1972	.4	.4	.3
1973	.4	.4	.3
1974	.4	.4	.3
1975	.4	.4	.3
1976	.4	.4	.3
1977	.4	.4	.3
1978	.4	.4	.3
1979	.4	.4	.3
1980	.4	.4	.3
1981	.4	.4	.3
1982	.4	.4	.3
1983	.4	.4	.3
1984	.4	.4	.3
1985	.4	.4	.3
1986	.4	.4	.3

SOURCE: U.S. Department of Commerce, Bureau of the Census, Current Population Reports, Series P-20, *Educational Attainment in the United States*, various years, and unpublished tabulations from the March Supplement to the Current Population Survey.

Table 2:2-3

Standard errors for years of college completed by population 25–34 years old, by race/ethnicity: 1970–86 (table 2:2-1)

Year (March)	1 or more years			2 or more years			4 or more years		
	White	Black	Hispanic*	White	Black	Hispanic*	White	Black	Hispanic*
					Percent				
1970	0.4	1.0	—	0.4	0.9	—	0.4	0.7	—
1971	.4	1.1	—	.4	.9	—	.4	.7	—
1972	.4	1.1	—	.4	1.0	—	.4	.8	—
1973	.4	1.1	—	.4	1.0	—	.4	.8	—
1974	.4	1.2	1.4	.4	1.0	1.2	.4	.8	.8
1975	.4	1.2	1.4	.4	1.1	1.2	.4	.8	.9
1976	.4	1.2	1.4	.4	1.0	1.2	.4	.8	.9
1977	.4	1.2	1.4	.4	1.1	1.2	.4	.8	.9
1978	.4	1.2	1.4	.4	1.1	1.2	.4	.8	.9
1979	.4	1.2	1.4	.4	1.1	1.2	.4	.8	.9
1980	.4	1.2	1.3	.4	1.1	1.2	.4	.8	.9
1981	.4	1.2	1.2	.4	1.1	1.1	.4	.8	.8
1982	.4	1.2	1.2	.4	1.1	1.1	.4	.8	.8
1983	.4	1.1	1.2	.4	1.0	1.1	.4	.8	.8
1984	.4	1.1	1.2	.4	1.0	1.1	.4	.8	.8
1985	.4	1.1	1.3	.4	1.0	1.2	.4	.8	.9
1986	.4	1.1	1.2	.4	1.0	1.1	.4	.8	.8

—Not available.

*Hispanic may be of any race.

SOURCE: U.S. Department of Commerce, Bureau of the Census, Current Population Reports, Series P-20, *Educational Attainment in the United States*, various years, and unpublished tabulations from the March supplement to the Current Population Survey.

Table 2:4-1

Bachelor's degrees conferred, by field: 1970–71 to 1984–85

Field	1970–71	1971–72	1972–73	1973–74	1974–75	1975–76	1976–77	1977–78
Total	839,730	887,273	922,362	945,776	922,933	925,748	919,549	921,204
Arts and sciences	418,583	432,039	442,873	449,235	429,342	418,534	400,765	387,610
Sciences	275,072	282,881	289,613	293,272	276,853	267,019	254,550	244,443
Physical and biological sciences	81,956	81,751	85,996	91,153	90,700	91,724	90,298	87,057
Social sciences	193,116	201,130	203,617	202,119	186,153	176,195	164,252	157,386
Humanities	143,511	149,158	153,260	155,963	152,489	150,615	146,215	143,167
Technical/professional	421,147	455,234	479,489	496,541	493,591	507,212	518,784	533,594
Business	114,865	121,360	126,263	131,766	133,010	142,379	150,964	160,187
Education	176,614	191,220	194,229	185,225	167,015	154,807	143,722	136,141
Other technical/professional	129,668	142,654	158,997	179,550	193,566	210,026	224,098	237,266
Computer and information sciences	2,388	3,402	4,304	4,756	5,033	5,652	6,407	7,201
Engineering and engineering technologies	50,046	51,164	51,265	50,286	46,852	46,331	49,283	55,654
Other	77,234	88,088	103,428	124,508	141,681	158,043	168,408	174,411

Field	1978–79	1979–80	1980–81	1981–82	1982–83	1983–84	1984–85
Total	921,390	929,417	935,140	952,998	969,510	974,309	979,477
Arts and sciences	372,191	362,750	353,425	353,428	344,502	342,434	340,800
Sciences	234,242	226,639	219,424	217,866	211,292	208,606	208,595
Physical and biological sciences	83,859	81,158	78,246	77,290	75,840	75,522	77,323
Social sciences	150,383	145,461	141,178	140,576	135,452	133,084	131,272
Humanities	137,949	136,111	134,001	135,562	133,210	133,828	132,205
Technical/professional	549,199	566,667	581,715	599,570	625,008	631,875	638,677
Business	171,764	185,361	199,338	214,001	226,893	230,031	233,351
Education	126,109	118,169	108,309	101,113	97,991	92,382	88,161
Other technical/professional	251,326	263,137	274,068	284,456	300,124	309,462	317,165
Computer and information sciences	8,719	11,154	15,121	20,267	24,510	32,172	38,878
Engineering and engineering technologies	62,375	68,893	75,000	80,005	89,270	94,444	96,105
Other	180,232	183,090	183,947	184,184	186,344	182,846	182,182

SOURCE: U.S. Department of Education, Center for Education Statistics, *Digest of Education Statistics, 1987* (based on HEGIS surveys of "Degrees and Other Formal Awards Conferred," various years).

NOTES: Physical and biological sciences include: life sciences, mathematics and physical sciences. Social sciences include: psychology and social sciences. Humanities include: area and ethnic studies, foreign languages, letters, liberal/general studies, multi/disciplinary studies, philosophy and religion, theology, and visual and performing arts. Other includes: agriculture and natural resources, architecture and environmental design, communications, communications technologies, allied health, health sciences, home economics, law, library and archival sciences, military sciences, parks and recreation, protective services, and public affairs.

Beginning in 1982–83, the taxonomy used to collect data on earned degrees by major field of study was revised. The figures for earlier years have been revised when necessary to reflect the new taxonomy.

Table 2:5-1

Master's degrees conferred by institutions of higher education, by field: 1970–71 to 1984–85

Field	1970–71	1971–72	1972–73	1973–74	1974–75	1975–76	1976–77	1977–78
Total	230,509	251,633	263,371	277,033	292,450	311,771	317,164	311,620
Arts and sciences	67,545	70,803	70,613	72,513	72,243	70,788	70,795	68,592
Sciences	38,193	40,291	40,667	41,285	40,642	39,540	39,836	38,478
Physical and biological sciences	17,286	17,586	17,548	17,448	16,684	15,905	16,140	15,740
Social sciences	20,907	22,705	23,119	23,837	23,958	23,635	23,696	22,738
Humanities	29,352	30,512	29,946	31,228	31,601	31,248	30,959	30,114
Technical/professional	162,964	180,830	192,758	204,520	220,207	240,983	246,369	243,028
Business	26,461	30,367	31,007	32,644	36,247	42,512	46,420	46,326
Education	88,952	98,143	105,565	112,610	120,169	128,417	126,825	119,038
Other technical/professional	47,531	52,320	56,186	59,266	63,791	70,054	73,124	75,664
Computer and information sciences	1,588	1,977	2,113	2,276	2,299	2,603	2,798	3,038
Engineering and engineering technologies	16,443	16,960	16,619	15,379	15,348	16,342	16,245	16,398
Other	29,500	33,383	37,454	41,611	46,144	51,109	54,081	56,228

Field	1978–79	1979–80	1980–81	1981–82	1982–83	1983–84	1984–85
Total	301,079	298,081	295,739	295,546	289,921	284,259	286,251
Arts and sciences	64,507	63,177	61,702	61,976	60,099	59,769	59,659
Sciences	36,128	34,496	33,682	33,798	33,313	32,190	32,525
Physical and biological sciences	15,318	14,589	13,829	14,115	13,823	13,723	13,737
Social sciences	20,810	19,907	19,853	19,683	19,490	18,467	18,788
Humanities	28,379	28,681	28,020	28,178	26,786	27,579	27,134
Technical/professional	236,572	234,904	234,037	233,570	229,822	224,490	226,592
Business	50,372	55,006	57,898	61,299	65,319	66,653	67,527
Education	111,995	103,951	98,938	93,757	84,853	77,187	76,137
Other technical/professional	74,205	75,947	77,201	78,514	79,650	80,650	82,928
Computer and information sciences	3,055	3,647	4,218	4,935	5,321	6,190	7,101
Engineering and engineering technologies	15,495	16,243	16,709	17,939	19,350	20,645	21,557
Other	55,655	56,057	56,274	55,640	54,979	53,815	54,270

NOTE: Beginning in 1982–83, the taxonomy used to collect data on earned degrees by major field of study was revised. The figures for earlier years have been revised when necessary to reflect the new taxonomy.

SOURCE: U.S. Department of Education, Center for Education Statistics, *Digest of Education Statistics, 1987* (based on HEGIS "Earned Degrees Conferred" surveys.

Table 2:5-2

Doctor's degrees conferred by institutions of higher education, by field: 1970–71 to 1984–85

Field	1970–71	1971–72	1972–73	1973–74	1974–75	1975–76	1976–77	1977–78
Total	32,107	33,363	34,777	33,816	34,083	34,064	33,232	32,131
Arts and sciences	19,035	19,586	20,414	19,825	19,944	19,830	19,293	18,440
Sciences	14,675	14,843	15,029	14,555	14,636	14,414	14,106	13,417
Physical and biological sciences	9,234	8,884	8,710	8,096	7,985	7,679	7,561	7,247
Social sciences	5,441	5,959	6,319	6,459	6,651	6,735	6,545	6,170
Humanities	4,360	4,743	5,385	5,270	5,308	5,416	5,187	5,023
Technical/professional	13,072	13,777	14,363	13,991	14,139	14,234	13,939	13,691
Business	807	896	923	981	1,009	953	863	866
Education	6,403	7,044	7,318	7,293	7,446	7,778	7,963	7,595
Other technical/professional	5,862	5,837	6,122	5,717	5,684	5,503	5,113	5,230
Computer and information sciences	128	167	196	198	213	244	215	196
Engineering and engineering technologies	3,638	3,671	3,492	3,312	3,108	2,821	2,586	2,440
Other	2,096	1,999	2,434	2,207	2,363	2,438	2,311	2,594

Field	1978–79	1979–80	1980–81	1981–82	1982–83	1983–84	1984–85
Total	32,730	32,615	32,958	32,707	32,775	33,209	32,943
Arts and sciences	18,730	18,385	18,405	18,217	17,910	17,936	17,745
Sciences	13,394	13,436	13,656	13,551	13,347	13,322	13,293
Physical and biological sciences	7,374	7,449	7,587	7,710	7,308	7,438	7,534
Social sciences	6,020	5,987	6,069	5,841	6,039	5,884	5,759
Humanities	5,336	4,949	4,749	4,666	4,563	4,614	4,452
Technical/professional	14,000	14,230	14,553	14,490	14,865	15,273	15,198
Business	860	792	842	855	809	977	866
Education	7,736	7,941	7,900	7,680	7,551	7,473	7,151
Other technical/professional	5,404	5,497	5,811	5,955	6,505	6,823	7,181
Computer and information sciences	236	240	252	251	262	251	248
Engineering and engineering technologies	2,506	2,507	2,561	2,636	2,831	2,981	3,230
Other	2,662	2,750	2,998	3,068	3,412	3,591	3,703

NDTE: Beginning in 1982–83, the taxonomy used to collect data on earned degrees by major field of study was revised. The figures for earlier years have been revised when necessary to reflect the new taxonomy.

SOURCE: U.S. Department of Education, Center for Education Statistics, *Digest of Education Statistics, 1987* (based on HEGIS "Earned Degrees Conferred" surveys).

Table 2:6-1

Number of first-professional degrees earned in dentistry, medicine, and law, and percent earned by women: 1970–71 to 1984–85

Year	Dentistry		Medicine		Law	
	Number	Percent earned by women	Number	Percent earned by women	Number	Percent earned by women
1970–71	3,745	1.1	8,919	9.1	17,421	7.1
1971–72	3,862	1.1	9,253	9.0	21,764	6.9
1972–73	4,047	1.4	10,307	8.9	27,205	8.0
1973–74	4,440	1.9	11,356	11.1	29,326	11.4
1974–75	4,773	3.1	12,447	13.1	29,296	15.1
1975–76	5,425	4.4	13,426	16.2	32,293	19.2
1976–77	5,138	7.3	13,461	19.1	34,104	22.5
1977–78	5,189	10.9	14,279	21.5	34,402	26.0
1978–79	5,434	11.8	14,786	23.0	35,206	28.5
1979–80	5,258	13.3	14,902	23.4	35,647	30.2
1980–81	5,460	14.4	15,505	24.7	30,331	32.4
1981–82	5,282	15.4	15,814	25.0	35,991	33.4
1982–83	5,585	17.1	15,484	26.7	36,853	36.1
1983–84	5,353	19.6	15,813	28.2	37,012	36.8
1984–85	5,339	20.7	16,041	30.4	37,491	38.5

SOURCE: U.S. Department of Education, Center for Education Statistics, *Digest of Education Statistics, 1987* (based on HEGIS "Earned Degrees Conferred" surveys, various years).

Table 2:6-2

Number of bachelor's and master's degrees earned in business and management, computer and information sciences, and engineering, and percent earned by women: 1970–71 to 1984–85

Year	Business and management[1]		Computer and information sciences[2]		Engineering[3]	
	Number	Percent earned by women	Number	Percent earned by women	Number	Percent earned by women
			Bachelor's degrees			
1970–71	113,542	8.1	2,388	13.6	44,898	0.8
1971–72	120,104	8.6	3,402	13.6	45,392	1.1
1972–73	124,933	9.7	4,304	14.9	46,411	1.2
1973–74	130,010	11.7	4,756	16.4	42,840	1.6
1974–75	131,459	15.3	5,033	18.9	39,388	2.1
1975–76	140,841	18.9	5,652	19.8	38,388	3.4
1976–77	149,462	22.7	6,407	23.9	40,936	4.9
1977–78	158,576	26.5	7,201	25.7	46,869	7.4
1978–79	170,098	29.9	8,719	28.1	53,021	9.1
1979–80	183,741	33.1	11,154	30.2	58,402	10.1
1980–81	197,727	36.4	15,121	32.5	63,287	11.1
1981–82	212,474	39.0	20,267	34.8	67,021	12.3
1982–83	220,078	41.2	24,510	36.3	72,246	13.3
1983–84	222,702	42.8	32,172	37.1	75,732	14.1
1984–85	225,413	44.4	38,878	36.8	77,154	14.5
			Master's degrees			
1970–71	26,461	3.9	1,588	10.3	16,309	1.1
1971–72	30,367	4.0	1,977	11.4	16,723	1.6
1972–73	30,971	4.9	2,113	10.6	16,497	1.7
1973–74	32,615	6.6	2,276	12.9	15,170	2.3
1974–75	36,240	8.4	2,299	14.7	15,127	2.4
1975–76	42,511	11.6	2,603	14.5	16,014	3.5
1976–77	46,412	14.3	2,798	16.6	15,961	4.4
1977–78	46,263	16.9	3,038	18.7	16,038	5.2
1978–79	50,355	19.2	3,055	18.8	15,227	6.1
1979–80	54,999	22.3	3,647	20.9	15,904	7.1
1980–81	57,887	25.0	4,218	23.0	16,386	8.1
1981–82	61,295	27.8	4,935	26.5	17,526	9.0
1982–83	65,245	28.9	5,321	28.3	18,630	9.3
1983–84	66,594	30.1	6,190	29.3	20,094	10.4
1984–85	67,461	30.9	7,101	28.7	20,926	10.7

[1]Excludes degrees in "business and office" and "marketing and distribution" fields.
[2]Includes degrees in computer and information sciences, general; information sciences and systems; data processing; computer programming; systems analysis; and other information sciences.
[3]Excludes engineering technologies.

SOURCE: U.S. Department of Education, Center for Education Statistics, *Digest of Education Statistics, 1987* (based on HEGIS "Earned Degrees Conferred" surveys, various years).

Table 2:7-1

Coefficients of variation for activities immediately following college graduation (table 2:7)

Major field of study	Total bachelor's recipients
	Percent
Technical/professional fields	0.4
Business and management	(*)
Engineering	(*)
Education	(*)
Health professions	(*)
Public affairs/social services	7.4
Arts and sciences	1.6
Biological sciences	6.5
Mathematics and physical sciences	3.4
Social sciences	(*)
Humanities	3.7
Psychology	6.0
Other fields	4.6

NOTE: The coefficient of variation of an estimate is the standard error of an estimate expressed as a percent of the estimate. A standard error may be used to establish a confidence interval around an estimate. Multiplying the standard error of an estimate by 1.96 establishes the .95 confidence interval.

SOURCE: U.S. Department of Education, Center for Education Statistics, "New Teachers in the Job Market: 1985 Update," 1987.

*National data are collected on the number of bachelor's degrees in these fields from CES's Higher Education General Information Survey (HEGIS), which is a universe survey of institutions. For these major fields of study, the Recent College Graduates sample data have been weighted up to national totals based on the HEGIS data. This could not be done for the other fields in the table, because they represent combinations of two or more fields in the HEGIS survey.

Technical note 2:7—Recent College Graduates surveys: activities of recent bachelor's degree recipients

Information on the activities of recent bachelor's degree recipients was obtained from the responses to several different questions on the Recent College Graduates surveys. Each respondent was coded as having only one principal activity, and these were coded hierarchically in the following order. Individuals who indicated that they were employed full time during the reference week were counted as full-time employed, regardless of their other activities. For example, someone who was working full-time and also enrolled in school was counted only as full-time employed.

Individuals who were not fulltime employed were then screened for military service (1985 only). Those not in the military were then checked for whether they were enrolled in school. Those not in any of the preceding categories were checked for whether they were unemployed (that is, not working but looking for work and having made specific attempts to find work). Individuals not in any of the preceding categories were then checked to see if they were "not in the labor force," that is, not working and not looking for work. Individuals not in any of these categories were classified as "other." This classification is composed primarily of people working part time.

Table 2:8-1

Standard errors for ratio of income of full-time male workers, by educational attainment: 1970–85 (table 2:8)

1981	0.01	0.02	0.02
1982	0.02	0.02	0.02
1983	0.02	0.02	0.02
1984	0.01	0.02	0.02
1985	0.01	0.02	0.03

SOURCE: U.S. Department of Commerce, Bureau of the Census, Current Population Reports, Series P-60, *Money Income of Families and Persons in the United States*, various years (Center for Education Statistics, special tabulations).

Technical note 2:8—Economic outcomes of higher education

This indicator was calculated from data collected in the Current Population Survey by the Bureau of the Census. The following section provides some background on divergent views associated with interpreting the data.

In the view of some researchers, one problem with correlating economic benefits and educational attainment is the isolation of the effects of educational attainment from the effects of ability and family background. Estimates of the impact of these two variables range from claims that they can explain at best 20 percent of the earning differentials by educational level (Becker, 1964) to the claim that family background is the single major factor determining earnings (Bowles and Gintis, 1976).

Other criticisms are related to what some have called the "screening effect" of higher education. A major economic outcome of obtaining a college degree, claim some researchers, is its labeling or credentialing consequences. Differences in earnings might arise, other things being equal, not only because higher education imparts useful knowledge to workers, but also because employers use educational attainment as a convenient screening device for filtering persons into specific jobs. According to this theory, higher educational attainment results in a worker's being directed into higher paying jobs, regardless of potential productivity level. While conceding that credentialing may give college-educated people an advantage in the labor market, other researchers say that the amount of advantage can be exaggerated (Douglass, 1977). One view asserts that employers are too adroit to settle for a credential alone when selecting among potential employees (Blaug, 1976).

While some critics of a direct correlation between income levels and educational levels argue that the real relationship is somewhat lower than it appears when the effects of ability and family background are taken into account, others assert that the real relationship may be somewhat *higher* than the direct correlation between income and educational level shows. Fringe benefits that are not included in median yearly income typically increase with higher levels of income. Some estimates show earnings to be underestimated by one-fifth when paid vacations and holidays alone are not included (Pscharopoulos, 1975).

As with income, opinions differ on the causal relationship between educational attainment and unemployment rates. Again, ability and family background are seen as major determining factors in finding and holding a job. Also, the relative stability of employment for educated people is attributed in part to the fact that white collar workers generally do not feel the impact of economic dislocations as strongly as other workers in the economy. The very jobs for which a college degree "screens" are those jobs that display the fewest effects of economic slowdowns (Bowen, 1977).

Becker, G., *Human capital*. New York: National Bureau of Economic Research, 1964.

Blaug, M., The empirical status of human capital theory: A slightly jaundiced view. *Journal of Economic Literature*. 1976.

Bowen, H., *Investment in learning*. Washington, DC: 1977.

Bowles, S.. and Gintis, H., *Schooling in capitalist America*. New York: Praeger, 1976.

Douglass, G.K., Economic returns on investments in higher education. In Bowen, H., *Investment in learning* (pp. 359-387). 1977.

Pscharopoulos, G., College quality as a screening device. *Journal of Human Resources*. 1975.

Table 2:9-1

Instructional expenditures as a percentage of total expenditures[1] for institutions of higher education, by type and control: Fiscal years 1979–85

Fiscal year	All institutions[2]	Doctoral	Comprehensive	General baccalaureate	2-year
			Public institutions		
1979	41.8	39.4	47.9	44.4	50.2
1980	41.5	39.0	47.4	43.7	50.3
1981	41.4	38.8	47.5	43.5	50.6
1982	41.9	39.1	48.2	43.7	50.8
1983	41.9	39.1	48.4	44.1	50.8
1984	41.5	38.9	47.9	44.0	50.8
1985	41.1	38.6	47.5	44.2	50.3
			Private institutions		
1979	41.8	36.4	41.8	36.6	[3]
1980	41.5	37.0	41.1	36.0	[3]
1981	41.4	37.2	40.6	35.5	[3]
1982	41.9	38.2	40.8	35.7	[3]
1983	41.9	38.3	41.0	35.6	[3]
1984	41.5	37.5	40.7	35.2	[3]
1985	41.1	37.0	40.2	34.7	32.9

[1]Expenditures entail education and general expenditures and mandatory transfers, including all current funds expenditures except those for auxiliary enterprises, hospitals, and independent operations, and their associated mandatory transfers. Expenditure data for fiscal years 1983–85 were adjusted to make them consistent with data from prior fiscal years.
[2]Includes both public and private institutions, plus new and specialized institutions not presented separately in the table.
[3]Consistent data over time on private 2-year colleges not available.

SOURCE: U.S. Department of Education, National Center for Education Statistics, "Financial Statistics of Institutions of Higher Education," unpublished tabulations for all years.

Table 2:9-2

Scholarship and fellowship expenditures as a percentage of total expenditures[1] for institutions of higher education, by type and control: Fiscal years 1979–85

Fiscal year	All institutions[2]	Doctoral	Comprehensive	General baccalaureate	2-year
		Public institutions			
1979	4.9	3.5	3.2	5.3	2.2
1980	4.9	3.5	3.3	5.6	2.3
1981	5.0	3.5	3.0	5.6	2.2
1982	4.9	3.4	3.0	5.7	2.1
1983	5.0	3.4	3.0	5.1	2.1
1984	5.2	3.5	2.9	4.8	2.0
1985	5.2	3.4	2.7	4.3	2.2
		Private institutions			
1979	4.9	8.0	9.3	12.0	[3]
1980	4.9	7.8	9.6	12.2	[3]
1981	5.0	8.1	9.6	12.7	[3]
1982	4.9	8.2	9.6	12.6	[3]
1983	5.0	8.1	9.4	12.7	[3]
1984	5.2	8.7	10.2	13.6	[3]
1985	5.2	8.8	10.6	14.2	7.1

[1]Expenditures entail education and general expenditures and mandatory transfers, including all current funds expenditures except those for auxiliary enterprises, hospitals, and independent operations, and their associated mandatory transfers. Expenditure data for fiscal years 1983–85 were adjusted to make them consistent with data from prior fiscal years.
[2]Includes both public and private institutions, plus new and specialized institutions not presented separately in the table.
[3]Consistent data over time on private 2-year colleges not available.

SOURCE: U.S. Department of Education, National Center for Education Statistics, "Financial Statistics of Institutions of Higher Education," unpublished tabulations for all years.

Table 2:11-1

Average amount of awards receied for six Federal student financial aid programs: Fiscal years 1973–74 to 1984–85

School year	Pell Grant	SEOG	CW-S	NDSL	SSIG	GSL
	Average award (in constant dollars)[1]					
1973–74	$270	$571	$532	$661	[2]	$1,137
1974–75	589	473	484	604	$262	1,135
1975–76	643	441	446	574	423	1,127
1976–77	601	438	505	591	445	1,136
1977–78	565	371	421	586	419	1,197
1978–79	572	373	407	563	423	1,282
1979–80	572	366	429	448	390	1,303
1980–81	504	308	484	512	335	1,255
1981–82	448	298	458	460	297	1,198
1982–83	462	264	421	436	261	1,103
1983–84	449	258	410	440	277	1,056
1984–85[3]	472	252	385	427	276	1,022

[1]Current dollars were converted to constant (1973–74) dollars using the Higher Education Price Index (HEPI). HEPI conversion factors for 1985–86 not yet available.
[2]Data for this year are not available because the program was not in existence.
[3]With the exception of the GSL program, data for this year are estimates.

NOTE: SEOG = Supplemental Educational Opportunity Grants
CW-S = College Work-Study
NDSL = National Direct Student Loans
SSIG = State Student Incentive Grants
GSL = Guaranteed Student Loans

SOURCE: U.S. Department of Education, Office of Postsecondary Education, unpublished tabulations.

Table 2:13-1

Standard errors for percentage of students 25 years old or older enrolled in a higher education institution (table 2:13)

Year[1]	Percent of students 25 years old or older
1972	0.67
1973	0.68
1974	0.67
1975	0.64
1976	0.63
1977	0.63
1978	0.64
1979	0.64
1980	0.68
1981	0.66
1982	0.66
1983	0.66
1984	0.66
1985	0.66

[1]Years 1972 to 1980 are controlled to the 1970 census base. Years 1981 to 1984 are controlled to the 1980 census base.

NOTE: Standard error estimates are calculated using the following formula:

$$s.e. = \sqrt{(b/xp(100-p)}$$

where: b = parameter associated with those 14 to 34 years old.
x = the size of the subclass of the population which is the base of the percent.
p = the percent of the sample 25 years old or older.

For the standard errors presented here, the value of b used was that for students 14 to 34 years old since no value for b has been estimated by the Census for the age group of 14 and older. For years prior to 1980, b was multiplied by 0.871. See page 13 of the source cited for more detailed information.

SOURCE: U.S. Department of Commerce, Bureau of the Census, Current Population Report, Series P-20, No. 404, *School Enrollment—Social and Economic Characteristics of Students, October 1984*, 1985.

Table 2:14-1

Standard errors for college enrollment by selected age groups and population of 18–24-year-olds: 1980–85 (table 2:14)

Year	Population 18–24 years old	Enrollment, by age group		
		Total*	Ages 18–24	Age 25 and above
		(In thousands)		
1980	209	151	123	93
1981	209	155	126	97
1982	209	156	127	98
1983	208	156	125	100
1984	207	156	126	99
1985	205	157	128	101

*Total includes a few students between ages 14 and 17.
SOURCE: U.S. Department of Commerce, Bureau of the Census, Current Population Reports, Population Characteristics, Series P-20. *School Enrollment—Social and Economic Characteristics of Students, October (various years).*

Table 2:15-1

Total enrollment in institutions of higher education, by type of institution and by students' race/ethnicity and resident status: Fall 1976–84

Type of institution and students' race/ethnicity and resident status	Number (in thousands)			Percent		
	1976	1980	1984	1976	1980	1984
			All institutions			
Total	10,986	12,087	12,162	100.0	100.0	100.0
White	9,076	9,833	9,767	82.6	81.4	80.3
Black	1,033	1,107	1,070	9.4	9.2	8.8
Hispanic	384	472	529	3.5	3.9	4.3
Asian or Pacific Islander	198	286	382	1.8	2.4	3.1
American Indian/Alaskan Native	76	84	83	0.7	0.7	0.7
Nonresident alien	219	305	332	2.0	2.5	2.7
			4-year institutions			
Total	7,107	7,565	7,651	100.0	100.0	100.0
White	5,999	6,275	6,263	84.4	82.9	81.9
Black	604	634	613	8.5	8.4	8.0
Hispanic	174	217	241	2.4	2.9	3.1
Asian or Pacific Islander	119	162	217	1.7	2.1	2.8
American Indian/Alaskan Native	35	37	37	0.5	0.5	0.5
Nonresident alien	177	241	280	2.5	3.2	3.7
			2-year institutions			
Total	3,879	4,521	4,511	100.0	100.0	100.0
White	3,077	3,558	3,504	79.3	78.7	77.7
Black	429	472	457	11.1	10.4	10.1
Hispanic	210	255	288	5.4	5.6	6.4
Asian or Pacific Islander	79	124	165	2.0	2.7	3.7
American Indian/Alaskan Native	41	47	45	1.1	1.0	1.0
Nonresident alien	42	64	52	1.1	1.4	1.2

NOTE: For 1984, 214 institutions did not report the racial/ethnic status of their student bodies. Data for 195 of these nonreporting institutions, comprising about 5 percent of total enrollment, were imputed by CES. Because of rounding, detail may not add to totals.

SOURCE: U.S. Department of Education, Center for Education Statistics, *Digest of Education Statistics, 1987* (based on Higher Education General Information Surveys, various years).

Table 2:15-2

Standard errors for participation rates of 18- to 24-year-olds in higher education by race/ethnicity: 1970–85 (table 2:15)

Year	Racial/ethnic group		
	White	Black	Hispanic*
1970	0.5	1.1	—
1971	0.4	1.1	—
1972	0.4	1.1	1.4
1973	0.4	1.0	1.4
1974	0.4	1.0	1.5
1975	0.4	1.1	1.6
1976	0.4	1.1	1.5
1977	0.4	1.1	1.4
1978	0.4	1.0	1.3
1979	0.4	1.0	1.3
1980	0.4	1.1	1.3
1981	0.4	1.2	1.3
1982	0.4	1.0	1.4
1983	0.4	1.0	1.4
1984	0.4	1.0	1.3
1985	0.5	1.0	1.4

—Not available.
*Hispanics may be of any race.

SOURCE: U.S. Department of Commerce, Bureau of the Census, Current Population Reports, Series P-20, *School Enrollment—Social and Economic Characteristics of Students: October (various years).*

Appendix B. Standard Errors: Description and Uses

The accuracy of any data is determined by the joint effects of sampling and nonsampling errors. Estimates based on a sample will differ somewhat from the figures that would have been obtained if a complete census had been taken using the same survey instruments, instructions, and procedures. The resulting differences are called sampling errors or sampling variability. In addition, all surveys, both universe and sample, are subject to design, reporting, and processing errors, and errors due to nonresponse. To the extent possible, these nonsampling errors are kept to a minimum by methods built into the survey procedures. In general, however, the effects of nonsampling errors are more difficult to assess than those produced by sampling variability.

The standard error is the primary measure of sampling variability. The chances are about 68 out of 100 that an estimate from the sample will differ from a complete census by less than the standard error. The chances are about 90 out of 100 that the difference would be less than 1.65 times the standard error; about 95 out 100 that the difference would be less than 1.96 times the standard error; and about 99 out of 100 that it would be less than 2.5 times as large. Thus, the standard error provides a specific range with a stated confidence within which a given parameter would lie if a complete census had been conducted.

To illustrate this further, consider Table 1:1-2 for estimates of standard errors from NAEP reading assessments. For an estimate of 58.3 percent of 9-year-olds reading at the basic level or higher on the 1971 reading assessment, the table shows a standard error of 1.1 percent. This means that the chances are about 95 out of 100 that the 58.3 percent estimate is within + *or* − 1.96 × 1.1 percent of the percent that would result from a complete census. Therefore, the 95 percent confidence interval is 56.1 to 60.5.

A similar statement can be made concerning an estimated difference. The standard error of a difference between two sample estimates is approximately equal to the square root of the sum of the squared standard errors of the estimates. The exact standard error of a difference, a-b, is in fact:

$$s.e._{a-b} = \pm \sqrt{s.e._a^2 + s.e._b^2 - 2s.e._{ab}}$$

All comparisons cited in the text, except where otherwise noted, are statistically significant at the 0.05 level of significance. This means that the difference between two sample estimates is greater than 1.96 times the standard error of the difference.

The preceding discussion on sampling variability was directed toward a situation concerning one or two estimates. A more difficult situation is encountered when determining the accuracy of statistical projections. In general, the farther away from the actual data being used for the projections, the greater the variability in the projection. That is, if annual data from 1970 to 1984 are being used to project enrollment in elementary and secondary schools, the farther away from 1984 one gets, the more variability there is in the projection. One is less sure of the 1994 projection of enrollment in elementary and secondary schools than the 1986 projection. A detailed discussion of the projections methodology is contained in *Projections of Education Statistics to 1992–93*, published by the National Center for Education Statistics, U.S. Department of Education (1985).

Appendix C. Sources of Data

The information presented in this report was obtained from many sources, including Federal and State agencies, private research organizations, and professional associations. The data were collected using several research methods, including surveys of a universe (such as all colleges) or of a sample, compilations of administrative records, and statistical projections. Particular care should be taken in comparing data from the different sources. Differences in procedures, timing, phrasing of questions, interviewer training, and so forth, mean that the results from the several sources are not strictly comparable.

The information in this report is identified by the sponsoring agency or organization. Government sources are presented first, followed by private research and professional associations. A description of the information source and methods of data collection used for each data source is presented, followed by a general discussion of data accuracy. More extensive documentation of survey procedures does not imply more problems with the data, only that more information is available from some sources than others.

1. Government Sources

Bureau of the Census

Current Population Survey

Estimates of school enrollment as well as social and economic characteristics of students are based on data collected in the Census Bureau's monthly household survey. The monthly Current Population Survey (CPS) sample consists of 614 areas, comprising 1,113 counties, independent cities, and minor civil divisions throughout the 50 States and the District of Columbia. The sample was initially selected from the 1970 census files and is periodically updated to reflect new housing construction when possible.

The monthly CPS deals with labor force data, including educational attainment for the civilian noninstitutional population (it excludes military personnel and their families living on post and inmates of institutions). In addition, supplemental questions are asked in October about enrollment for all household members.

The estimation procedure employed for the monthly CPS data involves the inflation of weighted sample results to independent estimates of characteristics of the civilian noninstitutional population in the United States by age, sex, and race. These independent estimates are based on statistics from decennial censuses; statistics on births, deaths, immigration, and emigration; and statistics on the strength of the Armed Forces. Generalized standard error tables are provided in the *Current Population Reports*.

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The Center for Education Statistics (CES)

Common Core of Data

The Common Core of Data (CCD) administered by CES is an annual universe survey of the State-level education agencies in the 50 States, the District of Columbia, and the outlying areas. Statistical information is reported on staff and students at the school, local education agency (LEA), and State levels; revenues and expenditures are reported at the LEA and State levels. Data are collected on a school year basis (July 1 through June 30). Survey instruments are sent to the States by October 15 of the subsequent school year; States have a period of 2 years in which to modify the data originally submitted.

Since the CCD is a universe survey, the information presented in this report is not subject to sampling error. However, nonsampling error can occur from two main sources, nonresponse and misreporting. In the case of CCD, nonresponse is minimal.

With the submission of data for about 85,000 public schools and approximately 15,800 local school districts compiled by 57 State education agencies, the opportunity does exist, however, for misreporting. This may occur for a variety of reasons. For example, interpretation of CES definitions and record-keeping systems vary among the States. CES attempts to minimize these errors by working closely with the Council of Chief State School Officers (CCSSO) and its Committee on Evaluation and Information Systems (CEIS).

As in any questionnaire survey, interpretation of instructions and definitions also may vary among respondents. Because elementary/secondary education is a State and local responsibility, any statistical total for the Nation as a whole reflects a composite of the different reporting practices in the States and areas. The use of standard forms and definitions tends to minimize these variations. The State education agencies report data to CES from data collected and edited in their regular reporting cycles. CES encourages the agencies to incorporate into their own

survey systems CES items they do not already collect so that they will also be available for the subsequent CCD survey. The result over time has been fewer missing cells in each State's response with a lessening need to impute data.

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Fast Response Survey System

The Fast Reponse Survey System (FRSS) was established by CES so that education data, needed within the Department of Education (ED) for planning and policy formulation, could be collected quickly and with minimum burden on respondents. FRSS provides preliminary estimates in as little as 4 months after the questionnaire has been developed. The system accomplishes this by using small, preselected, general-purpose national samples, prearranged data collection procedures, and short, easily answerable questionnaires. Since the inception of the FRSS in 1975, 28 surveys have been conducted. Data from the following two FRSS surveys were included in *The Condition of Education:*

(a) Survey of School Discipline Policies and Practices

The survey of school discipline was requested by the Office of Research (formerly the National Institute of Education) in response to a request from the National Council on Educational Research. The survey was performed under contract with Westat, Inc. In February 1985, questionnaires were mailed to a stratified national probability sample of about 850 public junior and senior high schools, representing the universe of approximately 26,400 junior, senior, and combined schools. The survey form was completed by the school administrator (often the principal) most familiar with the discipline policies of the school. The response rate for the survey was 93 percent. Estimates were adjusted for nonresponse and weighted to national totals. Generally, coefficients of variation (CV's) for national estimates ranged from 2 to 10 percent, while those for subgroups ranged from 5 to 20 percent.

(b) Survey of School Districts on High School Academic Requirements/Initiatives

The survey of high school academic requirements/initiatives was requested by the Program on Excellence in Education, National Institute of Education, as a follow up to a survey conducted for the Commission on Excellence in Education. This survey was performed under contract with Westat, Inc. In August 1985, the survey form was mailed to a stratified national probability sample of 565 school districts representing the estimated total of 11,248 districts with high schools in the Nation. Data collection was completed in October 1985 with a 99 percent response rate. The data were adjusted for questionnaire nonresponse and weighted to national totals.

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Higher Education General Information Survey

The Higher Education General Information Survey (HEGIS) is a coordinated effort administered by the Center for Education Statistics (CES). Its purpose is to acquire and maintain statistical data on the characteristics and operations of institutions of higher education. HEGIS, developed in 1966, is an annual universe survey of institutions listed in the latest *Education Directory, Colleges and Universities*.

The information presented in this publication draws on HEGIS surveys that solicit information concerning institutional characteristics, faculty salaries, finances, enrollment, and degrees. These surveys are part of the overall HEGIS package and as such cover all institutions in the universe. The data presented, therefore, are not subject to sampling error but are subject to nonsampling error. Due to the differing information solicited by the various survey instruments, the sources of nonsampling errors differ among the survey instruments. Each survey will therefore be discussed separately. Since data from the faculty salaries survey have not been used in this publication, this survey will not be discussed. A validation study, "HEGIS Post-Survey Validation Study," was conducted in 1979 for two HEGIS surveys—those on enrollment and degrees—to validate data collected for the 1976-77 academic year. More recent studies of HEGIS nonsampling errors have not been conducted.

(a) Institutional Characteristics of Colleges and Universities

The Institutional Characteristics Survey provides the basis for the universe of institutions presented in the *Education*

Directory, Colleges and Universities, and is used to determine the mailout for all other HEGIS data collection activities. The universe is made up of institutions that offer at least a 1-year program of college-level studies leading toward a degree and that meet certain accreditation criteria. Each year, institutions included in the previous year's *Directory* receive a computer printout of their information with a request to update. Institutions not previously included are sent a questionnaire form. All institutions reported in the *Directory* are certified as eligible to be listed by the Division of Eligibility and Agency Evaluation within the U.S. Department of Education.

(b) Opening Fall Enrollment in Institutions of Higher Education

The Opening Fall Enrollment in Institutions of Higher Education Survey has been part of the HEGIS series since its beginning, and similar surveys go back to the mid-1940's. The enrollment survey, like the HEGIS degree survey, does not appear to suffer significantly from problems of nonresponse. Response rates in recent years have been at least 95 percent. In 1977, the major sources of nonsampling error for this survey came from classification problems, misinterpretation of definitions, a missed survey due date, and operational errors (e.g., institutional procedures). Of these, the classification of students (which may well be related to definitional problems) appeared to be the main source of error. Institutions had problems in correctly classifying first-time freshmen, other first-time students, and unclassified students for both full-time and part-time categories.

These problems are more evident at 2-year institutions (both private and public) and the private 4-year institutions. In 1977–78, the classification problems led to an estimated overcount of 11,000 full-time students and an undercount of 19,000 part-time students.

Although the percentage error for the grand total was quite small (less than 1 percent), the percentage of errors for detailed student levels, for types of institutions, or for certain States might be as high as 5 percent or even higher.

(c) Degrees and Other Formal Awards Conferred

The Degrees and Other Formal Awards Conferred Survey has been part of the HEGIS series since its beginning. For the 1970–71 survey, however, the taxonomy used for classifying programs or areas in which degrees were awarded was changed. Once again in the 1982–83 academic year a different taxonomy, Classification of Instructional Programs, (CIP) was introduced. The information from survey years 1970–71 through 1981–82 is directly comparable, but care must be taken if information before and after these dates is included in any comparison. The response rate, which has been approximately 90 percent over the years, does not appear to be a significant source of nonsampling error for this survey. Because of the high response rate, nonsampling error caused by imputation would also be minimal.

The major sources of nonsampling error for this survey are the differences in the HEGIS program taxonomies and taxonomies used by the school, and the classification of double majors and double degrees. In the validation study conducted in 1979, it was found that the sources of nonsampling error noted above contributed to an error rate of 0.3 percent overreporting of bachelor's degrees and 1.3 percent overreporting of master's degrees. The differences, however, varied greatly among fields. Over 50 percent of the fields selected for the study had no errors identified. The major categories of fields that had large differences were these: business and management, education, engineering, letters, and psychology. With few exceptions, differences in proportion to the published figures were less than 1 percent for most of the selected fields that had some errors.

(d) Financial Statistics in Institutions of Higher Education Survey

This survey has been part of the HEGIS series since its beginning. A number of changes were made in the financial survey instruments in 1975 and again in 1982 with the inclusion of Pell Grants as a separate revenue category. While these changes were significant, only comparable information on trends collected since 1979 is presented in this publication. Other possible sources of nonsampling error in the financial statistics are nonresponse, imputation, misclassification, and misinterpretation of definitions. The response rate has been over 86 percent for the years reported. Two general methods of imputation have been used: (1) if the previous year's data were available for a nonresponding institution, these data were inflated using the Higher Education Price Index (HEPI) and adjusted according to changes in enrollments; or (2) if no previous year's data were available, current data were used from peer institutions selected for location (State or region), control, level, and enrollment size of the institution. For the most recent year reported, the imputation method did not include the adjustment for changes in enrollments. It should be noted that the imputed current funds expenditures of the nonrespondents are less than 3 percent of the aggregate U.S. total.

To reduce reporting error, CES uses national standards for reporting finance statistics. These standards are contained in (1) *College and University Business Administration: Administrative Services (1974 Edition)*, published by the

National Association of College and University Business Officers; (2) *Audits of Colleges and Universities* (as amended August 31, 1974), by the American Institute of Certified Public Accountants; and (3) *HEGIS Financial Reporting Guide (1980)*, by CES. Whenever possible, definitions and formats in the survey form are consistent with those in these three accounting texts.

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National Assessment of Educational Progress

The National Assessment of Educational Progress (NAEP) is a Congressionally mandated study funded by the Office of Educational Research and Improvement, U.S. Department of Education. The overall goal of the project is to determine the Nation's progress in education. To accomplish this goal, a cross-sectional study was designed and initially implemented in 1969. Each year, NAEP has gathered information about levels of educational achievement across the country. NAEP has surveyed the educational accomplishments of 9-, 13-, and 17-year-old students, and occasionally young adults, in 10 learning areas. Different learning areas were assessed annually and, as of 1980-81, biennially. Each area has been periodically reassessed in order to measure possible changes in education achievement.

The mathematics, science, reading, writing and literacy assessments presented in this publication were conducted by either the Education Commission of the States (1969-1983) or the Educational Testing Service (1983 to the present). NAEP in-school assessments were based on a deeply stratified three-stage sampling design. The first stage of sampling entails defining primary sampling units (PSU's)—typically counties, but sometimes aggregates of small counties; classifying the PSU's into strata defined by region and community type; and randomly selecting PSU's. For each age level, the second stage entails enumerating, stratifying, and randomly selecting schools, both public and private, within each PSU selected at the first stage. The third stage involves randomly selecting students within a school for participation in NAEP. Assessment exercises were administered either to individuals or small groups of students by specially trained personnel.

Information from NAEP is subject to both nonsampling and sampling error. Two possible sources of nonsampling error are nonparticipation and faulty instrumentation. The effects of nonparticipation are in some ways reduced through oversampling, although this does not assess the bias of nonparticipants. Instrumentation nonsampling error includes whether the NAEP assessment instruments measure what is being taught and in turn what is being learned by the students, ambiguous items or instructions, and insufficient time limits.

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High School and Beyond

High School and Beyond (HS&B) is a national longitudinal survey of 1980 high school seniors and sophomores conducted by CES. A probability sample of 1,015 high schools was selected with a target number of 36 seniors and 36 sophomores in each of the schools. A total of 58,270 students participated in the base-year survey. Substitutions were made for noncooperating schools in those strata where it was possible, but not for students. Student and parent refusals and student absences resulted in an 84 percent completion rate for students. This rate refers to the overall response rate of the survey and not the completion rate of each item within the survey.

Several small groups in the population were oversampled to allow for special study of certain types of schools or students. Students completed questionnaires and took a battery of cognitive tests. In addition, a sample of parents of sophomores and seniors (about 3,600 for each cohort) was surveyed.

Nonresponse can come from the 9 percent school nonresponse, a 16 percent student nonresponse, and the nonresponse rates for given items. The nonresponse rate by item for those students returning a survey ranges from a low of 0.3 percent (questioning if the student expects to graduate) to a high of 21 percent (concerning family income).

As part of the first followup survey, transcripts were requested in fall 1982 for an 18,152-member subsample of the sophomore cohort. Of the 15,941 transcripts actually obtained, 1,969 were excluded because the students had dropped out of school before graduation, 799 were excluded because they were incomplete, and 1,057 transcripts were excluded because either the student graduated before 1982 or the transcript indicated neither a dropout status

nor graduation. As part of the second followup survey in 1984, postsecondary transcripts were sought for the 7,434 1980 high school seniors who reported attending any type of postsecondary school or college since leaving high school. One or more transcripts were obtained for 93 percent of the cases.

Hispanic analyses presented in this report relied on students' self-identification to classify respondents as members of the various Hispanic subgroups. The classification was based on respondents' answers to the following question: "What is your origin or descent? (If more than one, please mark below the one you consider the most important part of your background)(MARK ONE)." Under the heading Hispanic or Spanish, four possible answers were listed: (1) Mexican, Mexican-American, Chicano; (2) Cuban, Cubano; (3) Puerto-Rican, Puertorriqueno or Boricua; (4) Other Latin American, Latino, Hispanic, or Spanish descent.

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Projections of Education Statistics

Since 1964, the Center for Education Statistics has published *Projections of Education Statistics*. This report includes projections of key education statistics in elementary and secondary schools and institutions of higher education. These statistics include enrollments, instructional staff, graduates, and earned degrees. In addition, it contains a methodology that describes the techniques and assumptions used to prepare the various projections.

Differences between the reported and projected values are almost inevitable. An evaluation of past projections revealed that at the elementary and secondary level, projections of enrollment and teachers have been quite accurate. Mean absolute percentage differences for enrollment were less than 1 percent for projections from 1 to 5 years into the future, while those for teachers were less than 4 percent.

Since projections of time series are subject to errors from both the inherent nature of the statistics themselves and the properties of projection methodologies, users are cautioned not to place too much confidence in the numerical values of the projections. More important economic and social changes that cannot be foreseen may lead to differences. Rather, projections are to be considered as indicators of broad trends.

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Private School Survey

The Private School Survey was a mail survey based on a multi-stage probability sample of private schools across the United States. It was done in conjunction with a survey of library and media centers. The first stage was the sampling of 75 areas, consisting of counties or groups of contiguous counties, with probabilities proportional to the square root of the population in the area. The second stage was the selection of schools within the sampled areas, with probabilities proportional to the square root of enrollment. The third and final stage was the sampling of teachers within the sampled schools. The schools within the areas were drawn from lists of schools created in the same sample areas for the 1983 Private School Survey. Since the lists were not updated, schools established after 1983 were not generally eligible for sampling. The estimates for the 1985–86 study are valid for teachers in schools that existed in 1983.

Of the 1,700 private schools sampled, 313 were determined to be outside the scope of the survey. Many of these schools had either closed or served only children below the first grade level. In addition to this restriction, a school was not considered in-scope unless it had a school day of at least 4 hours, was in session for at least 160 days per year, was located in a place other than a private home, and was privately administered.

A total of 1,174 school questionnaires were obtained from the 1,387 in-scope schools, resulting in an overall response rate of 85 percent. The data were collected by mail with telephone followups to increase the response rates. The response rate was over 90 percent in Catholic schools and about 80 percent in all the other schools.

On average, about 5 teachers were selected from each sampled school. A maximum of 10 teachers were selected from any one school. The school principal and librarian were not eligible for sampling even if they did some teaching, because they were the planned respondents for the school and library questionnaires. Responses were obtained from 5,295 teachers, which translated into an overall

response rate of 76 percent including all levels of nonresponse.

National estimates were constructed by weighting the responses to the questionnaires from the sample schools and teachers. Estimates of standard errors for the estimates were computed using the balanced half sampling technique known as balanced repeated replications.

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The Public School Survey

The 1985 Public School Survey was a mail sample survey conducted in late winter 1984 and spring 1985, which collected information on a nationally representative sample of 2,801 public schools and 10,650 teachers. School information was collected from the school administrators of the sample schools and included data on enrollment, staffing, minority enrollment, advanced placement programs, use of aides and volunteers, use of computers, and use of incentive programs for teachers. Teacher information included data on training, experience, age, race/ethnicity, teaching salary, working hours, and additional employment.

The school sample was selected from the Center for Education Statistics' Common Core of Data (CCD) universe of public elementary and secondary schools as follows: nine strata were defined, based on three categories of school type (elementary, secondary, and other) and three categories of school district size (1 to 5 schools; 6 to 50 schools; and more than 50 schools). The schools were selected independently within each stratum, with probability proportional to size. A school's size measure was defined as the square root of its full-time-equivalent number of teachers.

The teacher sample was selected according to a three-stage sampling design. The first stage sample consisted of the 2,801 schools. Lists of teachers were requested from all sampled schools. Each teacher within a sampled school was classified into one of three "teaching assignments" strata prior to the selection of sample teachers. The first of these strata consisted of general "Elementary" teachers, the second "Mathematics and Science" teachers, and the third of "Other" teachers. All teachers employed at those schools with four or fewer teachers were in the sample. A sample of four teachers was selected from each of the other cooperating sample schools according to a two-stage process which represented strata with probability proportional to size and teachers within strata with equal probability. A total of 10,650 sample teachers was selected.

The survey mailout began in February 1985 and continued into late spring. Questionnaire packets containing questionnaires for the school administrator and the selected teachers were addressed to the school administrator. Follow up efforts included additional mailings of questionnaires and telephone calls to nonrespondent administrators and teachers. The survey was closed out in June with a response rate of 84.6 percent for administrators and 80 percent for teachers.

For further information, contact

Charles Hammer
Elementary and Secondary Education Statistics Division
Center for Education Statistics
555 New Jersey Avenue, N.W.
Washington, DC 20208

Public and Private School Libraries and Media Centers Survey

This study was conducted by Westat, Inc., under contract to CES. The sample design was a stratified systematic sample. The sample was selected with probabilities proportionate to the square root of enrollment. Samples of 4,500 public and 1,700 private elementary and secondary schools were drawn. Private schools were oversampled by 200 because of an expected number of closed schools and duplicates on the private school file.

Survey forms were mailed to the public school sample in the fall of 1985 and the private school sample in January 1986. Response rates, measured at the end of the school year, were 92 percent for public schools and 86 percent for private schools.

The sample of public schools represents regular public elementary and secondary schools only. The sample of private schools, however, includes some schools devoted to special/alternative education, in addition to regular elementary and secondary schools. Significant differences in school size between public and private schools also strongly affect comparisons. An estimated 75 percent of the private schools had enrollment of under 300 pupils, compared with 30 percent of public schools. The mean size

of private schools was about 232 compared with a mean size of 511 for public schools.

For further information, contact

Jeffrey Williams
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Recent College Graduates Survey

The Center has conducted periodic surveys to collect information on outcomes of college graduation. The Recent College Graduates surveys have concentrated on those graduates entering the teaching profession. To obtain accurate results on this subgroup, graduates who are newly qualified to teach have been oversampled in each of the surveys. These surveys are the source of data on employment of recent bachelor's degree recipients and of those who taught following graduation.

Each of the surveys used a two-stage sample procedure: the first stage was a stratified sample of institutions offering bachelor's and master's degrees, and the second stage was a sample of graduates from the sampled institutions. The institutions were stratified by percentage of education graduates, control, and geographic region. The institutions were selected with probabilities proportional to their size, based on the number of graduates and the percentage of education graduates.

The graduates within the sampled institutions were stratified by level of degree; by whether they were education graduates; and by whether they were special or vocational education graduates. Different probabilities of selection were assigned to each stratum to obtain the desired sample size of each type of graduate.

Response rates have tended to be low because of the great difficulty in tracing the students after graduation. Much of the nonresponse can be attributed to the inability to find valid mailing addresses rather than refusals to participate.

The 1981 survey covered 301 institutions and 15,852 students. Responses were obtained from 286 institutions for an institutional response rate of 96 percent. Responses were received from 9,312 graduates, resulting in a response rate of 62 percent. A total of 716 graduates were determined to be out-of-scope for the survey.

In the 1985 survey, the response rate for colleges was 97.8 percent. Data were requested from 18,738 students from 404 colleges. Responses were obtained from 13,200 students for a response rate of 74 percent, with 885 out-of-scope graduates.

For further information, contact

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Center for Education Statistics
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Second International Mathematics Study

The Second International Mathematics Study was organized under an association of research institutes in about 24 countries known as the International Association for Evaluation of Education Achievement (IEA). Sample surveys of two population groups were conducted during the 1981–82 school year in 20 countries. Data were collected from school administrators, teachers, and students.

Population A included all students in the grade where the majority of students had attained the age of 13.0 to 13.1 years by the middle of the school year. In all countries, school enrollment is nearly universal at that age and represents the final year of elementary school for most countries. For the United States, population A was the eighth grade. For Japan, the seventh grade was chosen for study because the cognitive mathematics tests were more appropriate for that grade level.

Population B was defined as all students who were in the terminal grade of secondary education and who were studying mathematics as a substantial part of their academic program. These students were taking at least 5 hours of mathematics classes each week. In the United States, classes of pre-calculus and calculus were chosen. These classes represented about 12 percent of the total age group. In other countries, population B represented between 6 and 50 percent of the age group.

Altogether, about 20 countries' educational systems participated in the population A survey and 15 systems participated in the population B survey. The sample sizes for these 35 samples ranged from 1,000 to 8,800 students.

For further information, contact

Larry E. Suter
Education Outcomes Division
Center for Education Statistics
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Washington, DC 20208

National Institute on Drug Abuse

Monitoring the Future: A Continuing Study of the Lifestyles and Values of Youth

The National Institute on Drug Abuse of the U.S. Department of Health and Human Services is the primary supporter of this long-term study conducted at the University of Michigan Institute for Social Research. One aspect of the study deals with student drug abuse. Results of a national sample survey are published annually. Details on the survey and its methodology may be found in the publication entitled, *Drug Abuse Among American High School Students, College Students, and Other Young Adults* by Lloyd D. Johnston, Jerald G. Bachman, and Patrick M. O'Malley, available from the National Clearinghouse on Drug Abuse Information, 5600 Fishers Lane, Rockville, MD 20857

For further information, contact

Dr. Michael S. Backenheimer
National Institute on Drug Abuse
Division of Epidemiology and Statistical Analysis
5600 Fishers Lane
Rockville, MD 20857

National Science Foundation

Science Assessment and Research Project

The purpose of the 1981–82 Science Assessment and Research Project (SARP), based at the University of Minnesota and funded by the National Science Foundation, was to assess the status of science literacy among 9-, 13-, and 17-year-olds in the United States. SARP addressed two general issues: (1) What is the current status of science performance and attitudes in the United States? (2) How does the current status differ from that of previous assessments? Students answered a series of affective and cognitive questions selected from previous national assessments and those reflecting an understanding of how science affects society.

Following the procedure previously established by the National Assessment of Educational Progress (NAEP), the assessment was administered to a nationally representative sample of 18,000 students in approximately 700 schools. NAEP describes this sampling plan as a deeply stratified, multistage probability sample design. Selection of content for specific test items was guided by objectives developed by NAEP in 1976–77, the focus of the SARP assessment, and the advice of a research advisory committee that included representatives from several major professional organizations.

Test items were drawn from four major classification areas: (1) Science Content—the body of scientific knowledge; (2) Inquiry—the process by which the knowledge base is derived; (3) Science Technology and Society—the implications of the knowledge base for mankind; and (4) Attitudes—the orientation and feeling students have toward science.

For further information, contact

Wayne W. Welch
Science Assessment and Research Project
Minnesota Research and Evaluation Center
210 Burton Hall
Minneapolis, MN 55455

Office for Civil Rights

The Office for Civil Rights (OCR) in the U.S. Department of Education conducts periodic surveys of elementary and secondary schools to obtain data on the characteristics of students enrolled in public schools throughout the Nation. Racial/ethnic status, gender, limited English proficiency, and handicapping conditions are among the characteristics covered by recent surveys. Such information is required by OCR to fulfill its responsibilities under Title VI of the Civil Rights Act of 1964, Title IX of the Education Amendments of 1972, and section 504 of the Rehabilitation Act of 1973. The 1976 survey was a complete census of public school districts in the Nation. The 1984 survey was a stratified random sample of approximately 3,500 school districts, representing approximately 34,000 schools. The sample was stratified by district size, State, and estimated number of minority students.

For further information, contact

Anne Yorke
Office for Civil Rights
U.S. Department of Education
330 C Street, S.W.
Washington, DC 20202

Office of Special Education and Rehabilitative Services

Annual Report to Congress on the Implementation of the Education of the Handicapped Act

The Education of the Handicapped Act (EHA) requires the Secretary of Education to transmit to Congress annually a report describing the progress in serving the Nation's handicapped children. The Annual Report contains information on such children served by the public schools under the provisions of Part B of the EHA and for children served in State-operated programs (SOP) for the handicapped

under Chapter I of the Education Consolidation and Improvement Act (ECIA). National statistics on numbers of children receiving special education and related services in various settings and numbers of school personnel available and needed to provide such services are reported in an annual submission of data to the Office of Special Education and Rehabilitative Services (OSERS) by the 50 States, the District of Columbia, and the outlying areas. The child count information is based on the number of handicapped children receiving special education and related services on December 1st of each year for EHA and October 1st for Chapter I of ECIA/SOP.

Since each participant in programs for the handicapped is reported to OSERS, the data are not subject to sampling error. However, nonsampling error can occur from a variety of sources. Some States follow a noncategorical approach to the delivery of special education services but produce counts by handicapping condition only because EHA-B requires it. In those States that do categorize their handicapped students, definitions and labeling practices vary. In each case, even though States must use the Federal definitions of the handicapping categories for reporting purposes, there is no way to judge the accuracy of these States' relabeling of their students for the Federal count. Some States also have reported combined counts for some of the smaller categories of handicap.

These variations in labeling practices may help explain why there have been inconsistencies both year to year within a given State and from State to State in the ways in which students with more than one handicapping condition have been categorized. However, Federal and State efforts to ensure that children are being classified and reported appropriately and efforts to achieve greater consistency in classification and reporting among States help minimize these variations.

For further information, contact

Lou Danielson
Office of Special Education and Rehabilitative Services
330 C Street, S.W.
Washington, DC 20202

2. Private Research and Professional Associations

American College Testing Program

American College Testing Program

The American College Test (ACT) Assessment is taken by college-bound high school students. The test is designed to predict how well students might perform in college. The ACT tests English, mathematics, social studies, and natural science. The national norms are based on a 10 percent sample of all students who wrote the ACT assessment in a given year. Those students who failed to list a valid high school code are not represented by these norms because they are not included in individual reports provided to the schools.

It should be noted that college-bound students who take the ACT assessment are not representative in some respects of college-bound students nationally. First, students who live in the Midwest, Rocky Mountains and Plains, and the South are overepresented among ACT-tested students as compared to college-bound students nationally. Second, ACT-tested students tend to enroll in public colleges and universities more frequently than do college-bound students nationally.

State norms are prepared for every State for which 1,000 or more students complete the ACT assessment in a given year. For the reasons discussed above, these norms may not be representative of all college-bound students in a State.

For further information, contact

The American College Testing Program
2201 North Dodge Street
P.O. Box 168
Iowa City, IA 52243

Educational Testing Service

Preliminary Scholastic Aptitude Test and Scholastic Aptitude Test

The Admissions Testing Program of the College Board is composed of a number of college admissions tests, including the Preliminary Scholastic Aptitude Test (PSAT) and the Scholastic Aptitude Test (SAT). High school students participate in the program as sophomores, juniors, or seniors—some more than once during these years. If they had taken the tests more than once, only the most recent information is retained for analysis. The PSAT and SAT report subscores in the areas of mathematics and verbal ability.

As with the ACT assessment, students who take the SAT are not representative of college-bound students nationally. The college entrance examination used for admissions—SAT or ACT—varies by type of institution and by region.

For further information, contact

College Entrance Examination Board
Educational Testing Service
Princeton, NJ 08541

Graduate Record Examinations

The Graduate Record Examinations (GRE) are designed to measure the academic abilities and achievement of graduate school applicants. They consist of two types: general and subject area tests. The general test offers a global measure of the verbal, quantitative, and analytical reasoning abilities acquired over a long period of time and not related to any specific field of study. It resembles its counterpart for applicants to college, the Scholastic Aptitude Test (SAT). The subject area tests measure achievement in 17 subject areas, including economics, history, biology, chemistry, and engineering. In 1984–85, some 272,000 college graduates and soon-to-be-graduates took the general test, and 77,000 took one of the 17 subject area tests.

For further information, contact

Graduate Record Examinations
Educational Testing Service
Princeton, NJ 08541

Gallup Poll

(a) Public Attitudes Toward the Public Schools Survey

Through funding provided by Phi Delta Kappa, the Gallup Poll conducts annual surveys of the public's attitude toward education. Each year, the Poll interviews a sample of adults representative of the civilian noninstitutionalized population 18 years old and over. Samples used from 1977 to 1986 ranged from 1,506 to 1,557 respondents. In the 18th annual survey (1986), the sample included 1,522 respondents.

Personal, in-home interviewing was conducted in all areas of the Nation and in all types of communities. The sample design included stratification by size of community and region.

For further information, contact

Phi Delta Kappan
P.O. Box 789
Bloomington, IN 47402

(b) The Gallup Poll of Teachers' Attitudes Toward the Public Schools

The findings of this survey came from mail interviews with a representative sample of U.S. public school teachers. From a list provided by Market Data Retrieval, a sample of 2,000 teachers was selected to reflect the total national population of public school teachers. The sample was stratified proportionately by region and by teaching level. Questionnaires were mailed to the 2,000 teachers between April 30 and May 9 1984. Usable responses, on which the survey report is based, were received from 472 elementary school teachers and 387 secondary school teachers.

To ensure that the attitudes of nonrespondents were not significantly different from those of respondents, a telephone survey was conducted with a sample of 100 teachers who had not answered the mail survey. The results of the telephone survey showed that the sample of nonrespondents to the mail survey closely paralleled the sample of respondents—both in terms of attitudes and in terms of socioeconomic and demographic characteristics.

For further information, contact

Phi Delta Kappan
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Metropolitan Life Insurance Company

Metropolitan Life Survey of the American Teacher

The 1986 *Metropolitan Life Survey of the American Teacher* was conducted by Louis Harris and Associates for the Metropolitan Life Insurance Company from April 29 through June 30, 1986. A total of 1,602 telephone interviews were conducted with current public school teachers in kindergarten through grade 12 throughout all 50 States of the United States and the District of Columbia. In addition, 702 leaders and policymakers were interviewed by telephone.

Louis Harris and Associates drew a random sample of current teachers from a list of 1.2 million teachers (compiled by Market Data Retrieval). Sample sizes for completed interviews were set for each State, based on the proportion of elementary and secondary public school classroom teachers in each State. The State sample sizes were set in line with statistics published by CES.

Each selected current teacher was contacted at his or her school by a representative of Louis Harris and Associates

and requested to participate in the survey. When a teacher could not be reached directly, a message was left to allow a return call (including a toll-free number). Of all the teachers who were contacted at their schools or with whom a message was left, 51 percent were willing to talk to an interviewer.

The leadership groups were sampled randomly from lists of each universe: 150 school principals; 101 district superintendents; 150 State legislators; 101 State education officials; 100 deans of colleges of education; and 100 union officials.

For further information, contact

Metropolitan Life Insurance Company
One Madison Avenue
New York, NY 10010

National Education Association

Estimates of School Statistics

The National Education Association (NEA) reports public school revenue and expenditure data for the 50 States and the District of Columbia in its annual publication, *Estimates of School Statistics*. The data are based on survey responses of State education agencies, which are asked to provide estimated data for the current year and revisions to 4 years of historical data, as necessary.

In the fall of each year, NEA submits current-year estimates of over 35 educational statistics to each State's department of education for verification, revision, or both. The NEA estimates result from regression analysis, a statistical technique designed to predict data using specified criteria. Generally, about 30 States adjust the NEA estimates based on their own data. Only if an education department does not replace these estimates with their own data do the original regression-generated figures appear in the NEA publication.

For further information, contact

National Education Association – Research
1201 16th Street, N.W.
Washington, DC 20036

Appendix D: Glossary

Achievement test: An examination that measures the extent to which a person has acquired certain information or mastered certain skills, usually as a result of specific instruction.

Agriculture: Courses designed to improve competencies in agricultural occupations. Included is the study of agricultural production, supplies, mechanization and products, ornamental horticulture, forestry, and the services related thereto.

Appropriation: An authorization granted by a legislative body to make expenditures and to incur obligations for specific purposes.

Associate degree: An award that normally requires at least 2 but less than 4 years of full-time-equivalent college work.

Auxiliary enterprises: Enterprises of higher education institutions managed as essentially self-supporting activities. Examples are residence halls, food services, student health services, college unions, college stores, etc.

Average daily attendance (ADA): The aggregate days attendance of a given school during a given reporting period divided by the number of days school is in session during this period. Only days on which the students are under the guidance and direction of teachers should be considered as days in session.

Average daily membership (ADM): The aggregate membership of a school during a reporting period divided by the number of days school is in session during this period. Only days on which the pupils are under the guidance and direction of teachers should be considered as days in session. The average daily membership of groups of schools having varying lengths of terms is the average of the average daily memberships obtained for the individual schools.

Bachelor's degree: A degree granted for the successful completion of a baccalaureate program of studies, usually requiring at least 4 years (or equivalent) of full-time, college-level study.

Business: Includes business and management, business and office operations, and marketing and distribution.

Business and management: Instructional programs that describe the processes of purchasing, selling, producing, and interchanging of goods, commodities, and services in profit-making and nonprofit public and private institutions and agencies.

Carnegie unit: A standard of measurement that represents one credit for the completion of a 1-year course in a secondary school.

Catholic school: See Orientation.

Class size: The membership of a class at a given date.

Classroom teacher: A staff member assigned the professional activity of instructing students in classroom situations for which daily student attendance figures are kept.

Cohort: A group of individuals having a statistical factor in common, e.g., year of birth.

College: A postsecondary school that offers programs of education, usually leading to a first degree. Junior colleges and community colleges are included under this terminology.

College admission test: An examination used to predict the facility with which the individual will progress in learning college-level academic subjects.

Computer and information science: Instructional programs that describe the coding, processing, and storage of data through repetitious and highly complex mathematical operations at high speed and in accordance with strictly defined systems and procedures.

Control of institutions: A classification of institutions of higher education by whether the institution is operated by publicly elected or appointed officials (public control) or by privately elected or appointed officials and derives its major source of funds from private sources (private control).

Constant dollars: Dollar amounts that have been adjusted by means of cost indexes to eliminate inflationary factors and allow direct comparison across years.

Consumer Price Index: A monthly measure, compiled by the Bureau of Labor Statistics, of changes in the price of goods and services consumed by urban families and individuals. The index includes a group of about 300 goods and services, ranging from food to automobiles, and from rent to haircuts, normally purchased by urban wage earners.

Credit: The unit of value, awarded for the successful completion of certain courses, intended to indicate the quantity of course instruction in relation to the total requirements for a diploma, certificate, or degree. Credits

are frequently expressed in terms such as "Carnegie units," "credits," "semester credit hours," and "quarter credit hours."

Current dollars: Dollar amounts that have not been adjusted to compensate for inflation.

Current expenditures: The total charges incurred for the benefits of the current fiscal year, except for capital outlay and debt service.

Current expenditure per student: Current funds expenditure divided by a count of students in postsecondary or higher education. The count of students may be a head count or a full-time-equivalent count.

Current funds expenditures (higher education): Money spent to meet current operating costs, including salaries, wages, utilities, student services, public services, research libraries, scholarships and fellowships, auxiliary enterprises, hospitals, and independent operations. Excludes loans, capital expenditures, and investments.

Current funds revenues: Money received during the current fiscal year from revenue that can be used to pay obligations currently due, and surpluses reappropriated for the current fiscal year.

Doctor's degree: A program of instruction requiring at least 3 years of full-time-equivalent academic work beyond the baccalaureate degree, the completion of which results in a doctoral degree conferred by the faculty and ratified by the governing board of the institution granting the degree.

Educational and general expenditures: The sum of current funds expenditures on instruction, research, public service, academic support, student services, institutional support operation and maintenance of plant, and awards from restricted and unrestricted funds.

Educational and general revenues (higher education): Include current funds minus sales and services of auxiliary enterprises, sales and services of hospitals, revenues from independent operations and revenues from other sources (includes all items or revenues not covered elsewhere in the HEGIS survey form, for example, interest income).

Elementary education programs: Learning experiences concerned with the knowledge, skills, appreciations, attitudes, and behavioral characteristics that are considered to be needed by all pupils in terms of their awareness of life within our culture and the world of work and that normally may be achieved during the elementary school years as defined by applicable State laws and regulations.

Elementary school: A school classified as elementary by State and local practice and composed of any span of grades not above grade 8. A preschool or kindergarten school is included under this heading only if it is an integral part of an elementary school or a regularly established school system.

Elementary/secondary school: As reported in this publication, includes only regular schools—that is, schools that are part of State and local school systems—and also most nonprofit private elementary/secondary schools, both religiously affiliated and nonsectarian. Schools not reported include subcollegiate departments of institutions of higher education, residential schools for exceptional children, Federal schools for Indians, and Federal schools on military posts and other Federal installations.

Engineering and engineering technologies: Instructional programs that describe the mathematical and natural sciences gained by study, experience, and practice and applied with judgment to develop ways to utilize economically the materials and forces of nature for the benefit of mankind. Includes programs that prepare individuals to support and assist engineers and similar professionals.

English: A group of instructional programs that describes the English language arts, including composition, creative writing, and the study of literature.

Enrollment: The total number of students in a given school unit.

Expenditures: Charges incurred, whether paid or unpaid, presumed to benefit the current fiscal year. For elementary/secondary schools, these include all charges for current outlays plus capital outlays and interest on school debt. For institutions of higher education, these include current outlays plus capital outlays. For government, these include charges net of recoveries and other correcting transactions—other than for retirement of debt, investment in securities, extension of credit, or as agency transaction. Government expenditures include only external transactions, such as the provision of perquisites or other payments in kind. Aggregates for groups of governments exclude intergovernmental transactions among the governments.

Expenditures per pupil: Charges incurred for a particular period of time divided by a student unit of measure, for example, average daily attendance or average daily membership.

Financial aid package: That combination of grants, loans, and college work-study awards that a student receives from individuals, institutions, or governmental entities to help defray the cost of attending a postsecondary institution. Does not include funds received from parents, spouse, other relative, or student earnings.

First-professional degree: A program of instruction the completion of which results in a first-professional degree conferred by the faculty and ratified by the governing board of the institution granting the degree. In addition, the first-professional degree (1) signifies completion of the academic requirements to practice in the profession; (2) requires at least 2 years of full-time-equivalent college-level work before entrance; and (3) usually requires a total of at least 6 years of full-time-equivalent academic work to complete the degree program, including prior college-level work plus the length of the professional program itself. The Center for Education Statistics recognizes 10 professional fields: Chiropractic, Dentistry, Law, Medicine, Optometry, Osteopathy, Pharmacy, Podiatry, Theology, and Veterinary Medicine.

Fiscal year: A 12-month period at the end of which a school district or postsecondary institution determines its financial condition and the results of its operations and closes its financial books. The most common fiscal year begins July 1 and ends the following June 30. The Federal fiscal year begins October 1 and ends the following September 30.

Foreign languages: A group of instructional programs that describes the structure and use of a language other than English that is common or indigenous to people of the same community or nation, the same geographical area, or the same cultural traditions. Includes such features as sound, literature, syntax, phonology, semantics, sentences, prose and verse, as well as the development of skills and attitudes used in communicating and evaluating thoughts and feelings through oral and written language.

Full-time-equivalent enrollment (FTE): For institutions of higher education, enrollment of full-time and the sum of part-time students divided by a standard number of credits and reported by the institution. In the absence of an equivalent reported by the institution, the FTE is estimated by adding one-third of part-time to full-time enrollment.

Full-time students (higher education): Students enrolled in courses with total credit equal to at least 75 percent of the normal full-time course load.

General Education Development (GED) Test: A test administered by the American Council on Education as the basis for awarding a high school equivalent certification.

High School Equivalency Certificate: Certificate signifying a student has met State requirements and passed an approved exam, which is intended to provide an appraisal of achievement or performance in the broad subject matter areas usually required for high school graduation.

General program: A program of studies designed to prepare students for the common activities of persons as citizens, family members, and workers. A general program of studies may include instruction in both academic and vocational areas.

Geographic regions: Regions used by the Bureau of Economic Analysis of the U.S. Department of Commerce, the National Assessment of Educational Progress, and the National Education Association, as follows: (The National Education Association designated the Central region as Middle region in its classification).

Northeast	*Southeast*
Connecticut	Alabama
Delaware	Arkansas
District of Columbia	Florida
Maine	Georgia
Maryland	Kentucky
Massachusetts	Louisiana
New Hampshire	Mississippi
New Jersey	North Carolina
New York	South Carolina
Pennsylvania	Tennessee
Rhode Island	Virginia
Vermont	West Virginia

Central (Middle)	*West*
Illinois	Alaska
Indiana	Arizona
Iowa	California
Kansas	Colorado
Michigan	Hawaii
Minnesota	Idaho
Missouri	Montana
Nebraska	Nevada
North Dakota	New Mexico
Ohio	Oklahoma
South Dakota	Oregon
Wisconsin	Texas
	Utah
	Washington
	Wyoming

Gifted and Talented: Pupils who, by virtue of outstanding abilities, are capable of high performance, and who require differentiated educational programs and/or services

beyond those normally provided by the regular school program. Such pupils include those with demonstrated achievement and/or potential ability in any of the following areas, singly or in combination: (1) general intellectual ability, (2) specific academic aptitude, (3) creative or productive thinking, (4) leadership ability, (5) visual or performing arts, (6) psychomotor abilities.

Government appropriation: Funds received from or made available to the institution through acts of a legislative body, except grants or contracts.

Government grants and contracts: Revenues from governmental agencies for specific research projects or other types of programs.

Graduate: An individual who has received formal recognition for the successful completion of a prescribed program of studies.

Graduate student: A student who holds a bachelor's or first-professional degree, or equivalent, and is taking courses at the postbaccalaurate level. These students may or may not be enrolled in graduate programs.

Graduation: Formal recognition given to a pupil for the successful completion of a prescribed program of studies.

Handicapped: Persons evaluated as having any of the following impairments, who because of those impairments need special education and related services:

Deaf: A hearing impairment which is so severe that an individual is impaired in processing linguistic information through hearing, with or without amplification, and which adversely affects educational performance.

Deaf-blind: Concomitant hearing and visual impairments, the combination of which causes such severe communication and other developmental and educational problems that they cannot be accommodated in special education programs solely for deaf or blind students.

Educable mentally retarded: A condition of mental retardation which includes persons who are educable in the academic, social, and occupational areas even though moderate supervision may be necessary.

Hard of hearing: A hearing impairment, whether permanent or fluctuating, which adversely affects an individual's educational performance but which is not included under the definition of "deaf."

Mentally retarded: Significantly subaverage general intellectual functioning which exists concurrently with deficits in adaptive behavior and is manifested during the developmental period, and which adversely affects an individual's educational performance.

Multihandicapped: Concomitant impairments the combination of which causes such severe educational problems that they cannot be accommodated in special education programs solely for one of the impairments. The term does not include deaf-blind students. This category includes those who are severely orprofoundly mentally retarded.

Orthopedically impaired: A severe orthopedic impairment which adversely affects one's educational performance. The term includes impairment caused by congenital anomaly, disease, and other causes.

Other health impaired: Limited strength, vitality or alertness due to chronic or acute health problems—such as heart condition, tuberculosis, hemophilia, lead poisoning, or diabetes—which adversely affects one's educational performance.

Seriously emotionally disturbed: A condition exhibiting one or more of the following characteristics over a long period of time and to a marked degree, which adversely affects educational performance: an inability to learn which cannot be explained by intellectual, sensory, or health factors; an inability to build or maintain satisfactory interpersonal relationships with peers and teachers; inappropriate types of behavior or feelings under normal circumstances; a general pervasive mood of unhappiness or depression, or a tendency to develop physical symptoms or fears associated with personal or school problems. The term includes those who are schizophrenic.

Specific learning disability: A disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, which may manifest itself in an imperfect ability to listen, think, speak, read, write, spell, or do mathematical calculations. The term includes such conditions as perceptual handicaps, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia. The term does not include persons who have learning problems which are primarily the result of visual, hearing, or motor handicaps, of mental retardation, or of environmental, cultural or economic disadvantage.

Speech impaired: A communication disorder, such as stuttering, impaired articulation, or a language impairment, which, adversely affects an individual's educational performance.

Trainable mentally retarded: A condition of mental retardation which includes persons who are capable of only very limited meaningful achievement in the traditional basic academic skills, but who are capable of profiting from programs of training in self-care and simple job or vocational skills.

Visually handicapped: A visual impairment which, even with correction, adversely affects one's educational performance. The term includes the partially seeing and blind.

High school: A secondary school offering the final years of high school work necessary for graduation, usually including grades 10, 11, and 12 (in a 6-3-3 plan) or grades 9, 10, 11 and 12 (in a 6-2-4 plan).

Higher education: Study beyond the secondary school level at an institution that offers programs terminating in an associate, baccalaureate, or higher degree.

Higher education institutions (general definition): Institutions providing education above the instructional level of the secondary school, usually beginning with grade 13. Typically, these institutions include colleges, universities, graduate schools, professional schools, and other degree-granting institutions.

Higher education institutions (new classification scheme):

Doctoral-granting: These institutions are characterized by a significant level and breadth of activity in commitment to doctoral-level education as measured by the number of doctorate recipients and the diversity in doctoral-level program offerings.

Comprehensive: These institutions are characterized by diverse postbaccalaureate programs (including first-professional) but do not engage in significant doctoral-level education.

General baccalaureate: These institutions are characterized by their primary emphasis on general undergraduate, baccalaureate-level education. They are not significantly engaged in postbaccalaureate education.

Specialized: These baccalaureate or postbaccalaureate institutions are characterized by a programmatic emphasis in one area (plus closely related specialities), such as business or engineering. The programmatic emphasis is measured by the percentage of degrees granted in the program area.

2-year: These institutions confer at least 75 percent of their degrees and awards for work below the bachelor's level.

New institutions: These institutions are new additions to the Higher Education General Information Survey (HEGIS) Universe (not necessarily newly organized). When degree and award data become available, they will be reclassified.

Non-degree granting: These institutions offer undergraduate or graduate-level study, but do not confer degrees or awards.

Proprietary institutions: Education institutions that are under private control and whose profits derived from revenue are subject to taxation.

Higher education institutions (traditional classification scheme).

4-year institution: A higher education institution legally authorized to offer and offering at least a 4-year program of college-level studies wholly or principally creditable toward a baccalaureate degree. Within this category, a university is a postsecondary institution which typically comprises one or more graduate and professional schools.

2-year institution: A higher education institution legally authorized to offer and offering at least a 2-year program of college-level studies that terminates in an associate degree or is principally creditable toward a baccalaureate degree.

Higher education price index (HEPI): This index measures average changes in prices of goods and services purchased by colleges and universities through current-fund educational and general expenditures. The HEPI is based on the prices (or salaries) of professional personnel (e.g., faculty), non-professional personnel (e.g., clerical), and contracted services (e.g., data processing). The quantity of these goods and services has been kept constant based on the 1971-72 buying pattern of colleges and universities. For further details, see *Higher Education Prices and Price Indexes: 1985 Update*, Research Associates of Washington, 2605 Klingle Rd., NW, Washington, DC 20008.

Home economics: Includes courses of instruction organized for purposes of enabling pupils to acquire knowledge and develop understanding, attitudes, and skills relevant to (a) personal, home, and family life, and (b) occupational preparation using the knowledge and skills of home economics.

Humanities: Instructional programs in the following fields: area and ethnic studies, foreign languages, letters, liberal/general studies, multi/interdisciplinary studies, philosophy and religion, theology, and the visual and performing arts.

Independent operations: When undertaken by institutions of higher education, operations unrelated to the primary mission of these institutions (i.e., instruction, research, public service). Generally includes operations of Federally funded research and development centers.

Inflation: An upward movement in general price levels that results in a decline of purchasing power.

Junior high school: A separately organized and administered secondary school intermediate between the elementary and senior high schools, usually including grades 7, 8, and 9 (in a 6-3-3 plan) or grades 7 and 8 (in a 6-2-4 plan).

Labor force: Persons are classified as in the labor force if they are 14 years of age or older, employed as civilians, unemployed but looking for work, or in the Armed Forces.

Letters: Instructional programs that describe sounds, literature, syntax, phonology, morphology, semantics, sentences, prose and verse, as well as the development of skills and attitudes used in communicating and in evaluating thought and feelings through oral and written language.

Liberal/general studies: Instructional programs that describe the foundation necessary for understanding the self and society through an appreciation of the concerns of civilization and our common heritage.

Library media center: An organized collection of printed and/or audiovisual materials made available to students and teachers that is located in a designated place and administered as a unit. A variety of names are used for these centers, including library, media center, library media center, resource center and instructional media center.

Mandatory transfer: Mandatory transfers from current funds are transfers of funds that must be made in order to fulfill a binding legal obligation of the institution. Included under mandatory transfers are debt service provisions relating to academic and administrative buildings, including (1) amounts set aside for debt retirement and interest, and (2) required provisions for renewal and replacement of buildings to the extent these are not financed from other services.

Master's degree: A program of instruction requiring at least 1 but not more than 2 years of full-time-equivalent academic work beyond the baccalaureate degree, the completion of which results in a master's degree conferred by the faculty and ratified by the governing board of the institution granting the degree.

Mathematics: A group of instructional programs that describes the science of logical symbolic language and its application.

Mean test score: The score obtained by dividing the total sum of scores of all individuals in a group by the number of individuals in that group.

Middle School: A separately organized and administered school, usually beginning with grade 5 or 6, with a program designed specifically for the early adolescent learner. Most middle schools presume, in ultimate plan if not in present reality, a 4-year high school for the grade or grades which follow, as in a 4-4-4 plan or a 5-3-4 plan.

Migration: Geographic or spatial mobility involving a change of usual residence between clearly defined geographic units, that is, counties, States, regions.

Minimum-competency testing: Measuring the acquisition of competence or skills to or beyond a certain specified standard.

Multi/interdisciplinary studies: Instructional programs, the components of which derive from two or more separate conventional academic instructional programs.

Orientation (private school): The group or groups, if any, with which a private elementary/secondary school is affiliated, or from which it derives subsidy or support:

Catholic school: A private school over which a Roman Catholic church group exercises some control or provides some form of subsidy. Catholic schools for the most part include those operated or supported by: a parish, a group of parishes, a diocese, or a Catholic religious order.

Other religious school: A private school affiliated with an organized religion or denomination other than Roman Catholicism or which has a religious orientation other than Catholic in its operation and curriculum.

Nonsectarian school: A private school whose curriculum and operation are independent of religious orientation and influence in all but incidental ways.

Other courses: Includes courses in agriculture; architecture and environmental design; area and ethnic studies; communications; computers and information sciences; consumer, personal and miscellaneous services; education; engineering; health; industrial arts; law; liberal/general studies; library and archival sciences; military sciences; multi/interdisciplinary studies; parks and recreation; philosophy, religion, and theology; psychology; public affairs and protective services; special vocational education programs; and exceptional student education.

Part-time student: Undergraduate—A student enrolled for either 11 semester credits or less, or 11 quarter credits or less, or less than 24 contact hours per week. *Graduate*—A student enrolled for either 8 semester credits or less, or 8 quarter credits or less.

Philosophy and religion: Instructional programs that describe the critical examination of the categories for describing reality, the nature and contexts of human experience, the methodology of rational inquiry and criteria of practice (philosophy); and the investigation of organized forms, beliefs, and practices related to eternal principles or transcendant spiritual entities (religion).

Physical and biological sciences: Physical sciences are instructional programs that describe inanimate objects, processes, or matter, energy, and associated phenomena. Biological sciences are instructional programs that describe the systematic study of living organisms. (See also *Science*.)

Postsecondary institution: An institution providing instructional programs for persons who have completed or otherwise left educational programs in elementary and secondary school.

Private institution: An institution controlled by one or more individuals other than a State, a subdivision of a State, or the Federal government, and which is usually supported primarily through private funds.

Private school: An elementary or secondary school (1) controlled by an individual or agency other than a State, a subdivision of a State, or the Federal government; (2) usually supported primarily by other than public funds; and (3) the operation of whose program rests with other than publicly elected or appointed officials.

Public institution: An institution that is operated by publicly elected or appointed school officials, in which the programs and activities are under the control of public officials, and that derives its primary support from public funds.

Public school: An elementary or secondary school operated by publicly elected or appointed school officials, in which the program and activities are under the control of these officials, and which is supported primarily by public funds.

Pupil/teacher ratio: Student enrollment, for a given period of time, divided by the number representing the total full-time equivalency of classroom teaching assignments serving these pupils during the same period.

Racial/ethnic group: Classification indicating general racial or ethnic heritage based on self-identification, as in data collected by the Bureau of the Census, or on observer identification, as in data collected by the Office for Civil Rights. These categories are in accordance with the Office of Management and Budget standard classification scheme presented below:

White: A person having origins in any of the original peoples of Europe, North Africa, or the Middle East.

Black: A person having origins in any of the black racial groups in Africa.

Hispanic: A person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin.

Asian or Pacific Islander: A person having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands. This area includes, for example, China, India, Japan, Korea, the Philippine Islands, and Samoa.

American Indian or Alaskan Native: A person having origins in any of the original peoples of North America, and who maintains cultural identification through tribal affiliation or community recognition.

Revenues: All funds received from external sources, net of refunds, and correcting transactions. Noncash transactions such as receipt of services, commodities, or other receipts "in kind" are excluded, as are funds received from the issuance of debt, liquidation of investments, and nonroutine sale of property.

Salary: The total amount regularly paid or stipulated to be paid to an individual, before deductions, for personal services rendered while on the payroll of a business or organization.

School climate: The social system and culture of the school, including the organizational structure of the school and values and expectations within it.

School district: An educational agency at the local level that exists primarily to operate public schools or to contract for public school services. This term is used synonymously with the terms "local basic administrative unit" and "local education agency."

School year: The 12-month period of time denoting the beginning and ending dates for school accounting purposes, usually from July 1 through June 30.

Science: Includes the body of related courses, organized for carrying on learning experiences concerned with knowledge of the physical and biological world, and of the processes of discovering and validating this knowledge. (See also *Physical and biological sciences.*)

Secondary instructional level: The general level of instruction provided for pupils in secondary schools and any instruction of a comparable nature and difficulty provided for adults and youth beyond the age of compulsory school attendance.

Senior high school: A secondary school offering the final years of high school work necessary for graduation and invariably preceded by a junior high school or middle school.

Social sciences: Instructional programs that describe the substantive portions of behavior, past and present activities, interactions, and organizations of people associated together for religious, benevolent, cultural, scientific, political, patriotic, or other purposes.

Socioeconomic status (SES): For the High School and Beyond study and the National Longitudinal Study of the High School Class of 1972, the SES index is a composite of five equally weighted, standardized components: father's education, mother's education, family income, father's occupation, and household items. The terms high, middle, and low SES refer to the upper, middle two, and lower quartiles of the weighted SES composite index distribution.

Staff assignments, elementary and secondary school:

District administrators—The chief executive officers of education agencies (such as superintendents and deputies) and all others with district-wide responsibility. Such positions may be business managers, administrative assistants, coordinators and the like.

District administrative support staff—Those personnel that are assigned to the staffs of the district administrators. They may be clerks, computers programmers and others concerned with the functioning of the entire district.

Guidance counselors—Professional staff whose activities involve counseling with students and parents, consulting with other staff members on learning problems, evaluating the abilities of students, assisting students in personal and social development, providing referral assistance, and working with other staff members in planning and conducting guidance programs for students.

Instructional (teacher) aides—Those staff members assigned to assist a teacher with routine activities associated with teaching (i.e., those activities requiring minor decisions regarding students, such as monitoring, conducting rote exericises, operating equipment, and clerking). Volunteer aides are not included in this category.

Librarians—Staff members assigned to perform professional library service activities such as selecting, acquiring, preparing, cataloging, and circulating books and other printed materials; planning the use of the library by students, teachers and other members of the instructional staff; and guiding individuals in their use of library books and materials, which are maintained separately or as part of an instructional materials center.

Other support services staff—All staff not reported in other categories. This group includes media personnel, social workers, data processors, health maintenance workers, bus drivers, security cafeteria workers, and other staff.

School administrators—Those staff members whose activities are concerned with directing and managing the operation of a particular school. They may be principals or assistant principals, including those who coordinate school instructional activities with those of the local education agency (LEA) and other appropriate units.

School administrative support staff—Staff members whose activities include the work of clerical staff in support of teaching and administrative duties involved with the office of the principal.

Standardized test: An examination for which there are data on reliability and validity, administered and scored according to specific instructions, and capable of being interpreted in terms of adequate norms.

Standardized test performance: The weighted distributions of composite scores from standardized tests used to group students according to performance.

Student: An individual for whom instruction is provided in an educational program under the jurisdiction of a

school, school system, or other education institution. No distinction is made between the terms "student" and "pupil"; the term "student" is used to include individuals at all instructional levels. A student may receive instruction in a school facility or in another location, such as at home or in a hospital. Instruction may be provided by direct student-teacher interaction or by some other approved medium such as television, radio, telephone, and correspondence.

Student financial aid: Funds provided to students attending a postsecondary institution to assist them in defraying the costs of attendance. Such funds may take the form of a grant, scholarship, fellowship, low-interest loan, or part-time job with wages paid out of governmental and institutional funds.

Tuition and fees: A payment or charge for instruction, or compensation for services, privileges, or for the use of equipment, books, or other goods.

Undergraduate students (higher education): Students registered at an institution of higher education who have not completed requirements for a bachelor's degree.

Unemployed: Civilians who, during a survey period, had no employment but were available for work and (1) had engaged in any specific jobseeking activity within the past 4 weeks, or (2) were waiting to be called back to a job from which they had been laid off, or (3) were waiting to report to a new wage or salary job within 30 days.

University: An institution of higher education consisting of a liberal arts college, offering a program of graduate study, and having usually two or more graduate or professional schools or faculties and empowered to confer degrees in various fields of study.

Visual and performing arts: Includes courses in crafts, dance, design, dramatic arts, film arts, fine arts, graphic arts technology, and music.

Year-round, full-time worker: One who worked primarily at full-time civilian jobs for 50 weeks or more during the preceding calendar year.

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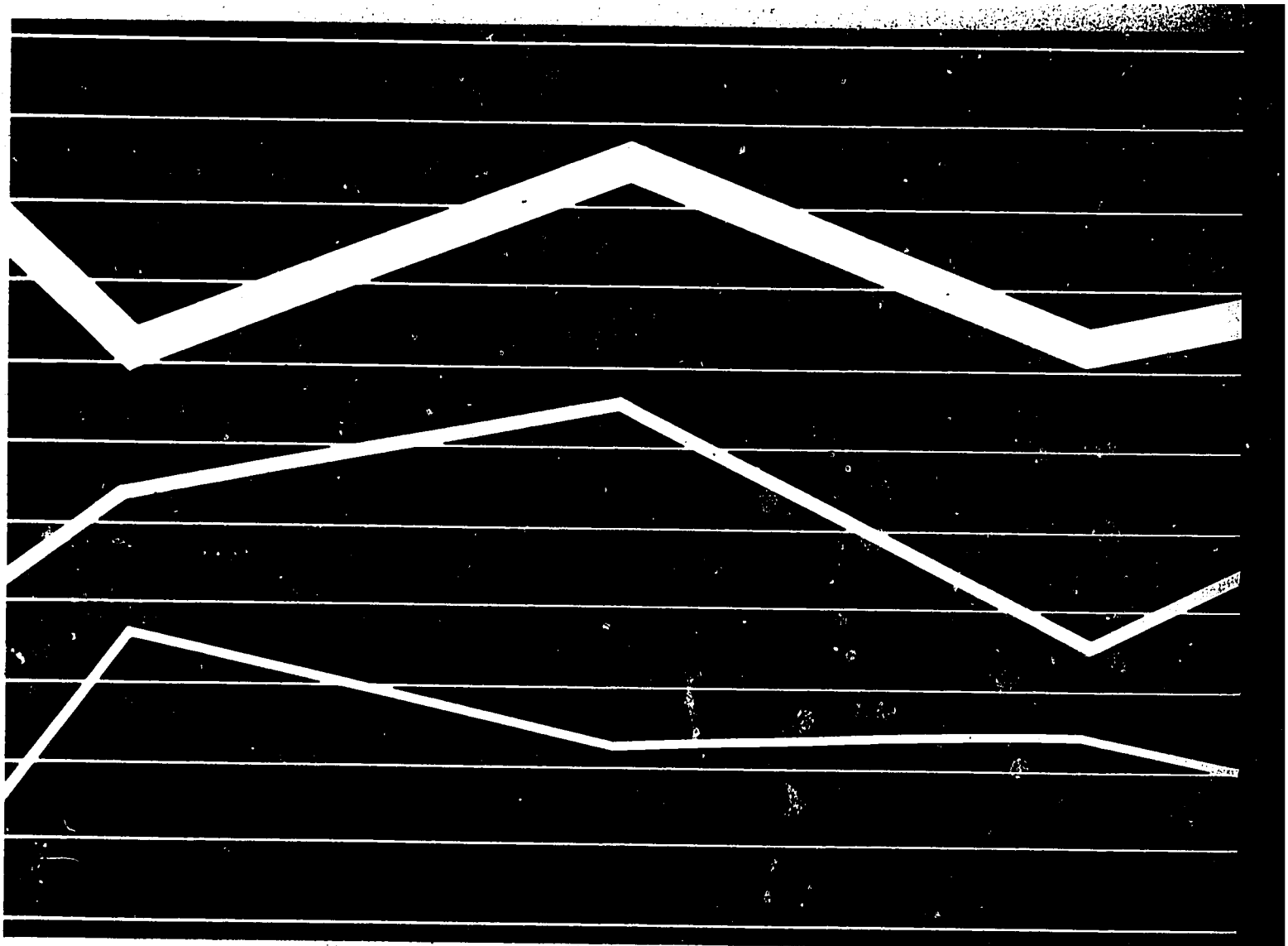

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