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**AUTHOR** Stern, Joyce D., Ed.; Chandler, Marjorie O., Ed.  
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**ABSTRACT**

Statistical information 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 is presented in a chartbook format. This year, the indicators are published in three volumes: (1) Elementary Secondary; (2) Post Secondary; (3) Supporting Data, Supplemental Data, Data Sources. The information in this publication provides indicators of the outcomes, resources, and context of postsecondary education. Outcome indicators include student achievement, trends in higher educational attainment, degrees conferred, and economic outcomes. Resource indicators focus on fiscal resources: expenditures per student, revenues, and faculty salaries. 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. Presented for the first time as indicators are the following: (1) degrees earned by foreign students; (2) degrees earned by race and ethnicity; (3) field of study by race and ethnicity; (4) expenditures on research and development in higher education institutions; (5) the allocation of expenditures and tuition; and (6) trends in college faculty salaries. Narratives and charts depict each indicator; 19 supporting tables are appended. (MLF)

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## Highlights

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Doctorate-granting institutions spent substantially increasing amounts on research and development (R&D) between fiscal years 1972 and 1986, after accounting for inflation. These institutions' share of total U.S. spending on R&D remained the same in 1986 as in 1972 (9 percent). The Federal government remains the primary source of R&D expenditures at academic institutions, but its role has declined somewhat. (*Indicator 2:4*)

Among young adults working full-time, year-round, the college-educated generally earned more annually during the 1978-87 period than those who had completed only 4 years of high school, regardless of race or sex. The earnings advantage of the college-educated was more pronounced among those who had completed 4 or more years of college than among those who had only completed 1-3 years. (*Indicator 2:8*)

From 1977 to 1985, foreign students earned an increasing proportion of the bachelor's and graduate degrees awarded by American colleges and universities. The presence of foreign students was most pronounced at the master's and doctor's levels, particularly in natural science and engineering, where they earned about 1 out of every 4 degrees in 1985. (*Indicator 2:9*)

Despite an increase in the young adult black population, blacks earned fewer higher education degrees in 1985 than in 1977 at all degree levels except the first-professional. The number of degrees awarded to Hispanics, Asians,

and American Indians/Alaskan Natives, however, was higher at all levels. (*Indicator 2:10*)

In 1985, as in 1977, the natural sciences and engineering were far more popular among Asian degree recipients than among white and other minority recipients. Despite substantial declines in popularity between 1977 and 1985, education remains by far the most popular field at the master's level among non-Asian minorities. (*Indicator 2:11*)

Among young adults who had attended college 2 or more years but had not graduated, those still enrolled had higher functional literacy scores than those no longer enrolled. However, the literacy scores of young adults with 2 or more years of college completed who were still enrolled were similar to the scores of college graduates. (*Indicator 2:12*)

Expenditures for instruction, research, and administration as well as undergraduate tuition charges rose considerably more than inflation during the mid-1980s at both public and private universities. (*Indicator 2:14*)

During most of the 1970s and into the early 1980s, college faculty salaries at both public and private institutions steadily lost ground to inflation. Since the early 1980s, faculty salaries have consistently outpaced inflation, but recent salary increases have not been large enough to restore purchasing power to early 1970s levels. (*Indicator 2:15*)

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# **THE CONDITION OF EDUCATION**

## **Postsecondary Education**

**1988**

### **Volume 2**

**Editor:**  
Joyce D. Stern

**Associate Editor:**  
Marjorie O. Chandler

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**U.S. Department of Education**

**William J. Bennett**

*Secretary*

**Office of Educational Research and Improvement**

**Chester E. Finn, Jr.**

*Assistant Secretary*

**National Center for Education Statistics**

**Emerson J. Ellicott**

*Acting Commissioner*

**Information Services**

**Ray Fields**

*Director*

**National Center for Education Statistics**

"The purpose of the Center shall be to collect, and analyze, and disseminate statistics and other data related to education in the United States and in other nations."—Section 406 (b) of the General Education Provisions Act, as amended (20 U.S.C. 1221e-1).

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## Commissioner's Statement

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The National Center for Education Statistics gathers and publishes statistics and other information on the status and progress of education in the United States. The Federal authorization for these activities (first enacted in 1867) states that the Center will "collect, collate, and from time to time, report full and complete statistics on the conditions of education in the United States." A later provision (sec. 406 (d)(1)(C) of the General Education Provisions Act) mandated an annual statistical report from the Secretary of Education on the subject. This 1988 edition is the 14th report under that mandate.

In the past, the data in these reports were organized into chapters dealing with broad topics in education and featured over 100 charts together with extensive tabular material. To present the current status of education in a more succinct and accessible way, we began with the 1986 edition of *The Condition of Education* to present selected statistical information in the form of education "indicators"—key data that measure the "health" of education or its trends. These indicators derive from studies carried out by the Center as well as from surveys conducted elsewhere, both within and outside of the Federal Government. The data are the most current, valid, and representative education statistics available in America today for the subjects and issues with which they deal. No more than 40-50 indicators will be presented in a given year. By contrast, the Center's other major annual publication, *The Digest of Education Statistics*, is an exhaustive compendium of statistics on education.

This year, the Center has chosen to publish the indicators in three volumes. *The Condition of Education* report itself is scaled down and includes only the primary information—the narratives and charts depicting each indicator, plus the essential supporting tables. Furthermore, we have printed this information in two separate volumes, one addressing elementary and secondary education and one on postsecondary education. In addition, we are issuing a publication that includes the indicators from both of these volumes, plus all the technical supporting data, any supplemental information, and data sources for those wishing to have these additional resources.<sup>1</sup>

For postsecondary education, we are presenting for the first time as indicators statistics on degrees earned by foreign students; degrees earned by race and ethnicity; field of study by race/ethnicity; expenditures on research and development in higher education institutions; the allocation of expenditures and tuition; and trends in college faculty salaries. Moreover, this report contains measures of literacy among college students and graduates derived from the National Assess-

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ment of Educational Progress. Indicators that use data from the most recent administration of the Higher Education General Information Survey (HEGIS) are also included.

Despite all the new material, however, our goal has not been to develop ever more indicators. Rather, the purpose is to identify a basic set of indicators, together with supporting detail, that can be repeated with updated information each year. This basic set of indicators would be supplemented in each annual edition by indicators based on infrequent or one-time studies. The basic set of indicators in this volume is still under development, though the 1988 edition considerably expands the breadth of postsecondary information covered in previous editions of the *Condition*.

In future editions, the utility of this report should increase as more diverse data of high quality become available, especially as new time series can be constructed. The Center is now planning a second iteration of the National Postsecondary Student Aid Survey to be fielded in 1990. Data from the first cycle (1987) will be available for next year's edition of the *Condition*. Data collection is already underway from more higher education institutions than the traditional 2- and 4-year colleges and universities. This expanded survey is called the Integrated Postsecondary Education Data System (IPEDS). Information from this broader group of institutions will give the education community a clearer picture of what is happening in postsecondary education. Data from IPEDS will be available for the first time in reports to be issued by the Center this year and in the 1989 *Condition*.

In developing indicators, the Center has participated in a widening national discussion about the types of measures that are useful in monitoring the progress of education. For example, the National Science Foundation introduced education indicators on science and mathematics in the 1985 edition of its biennial report, *Science Indicators*, and in 1987 published a major report entitled *Indicator Systems for Monitoring Mathematics and Science Education*. The guidance in that report, both on suggested theoretical models and on the content of recommended indicators, is applicable to education indicators in areas other than precollege mathematics and science. The Office of Research in the Department's Office of Educational Research and Improvement has contracted with several institutions of higher education to develop student assessment models in several subject areas.

The Center also has convened its own meetings of researchers and practitioners to guide its indicator efforts. The final selection of indicators presented in this volume has been based on substantial advice and consultation. They represent, therefore, a professional judgment as to what are the most critical measures of

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the "health" of education, tempered by the sometimes harsh limitations of available data.

Finally, the format of *The Condition of Education* is designed to present statistical information in an accessible manner for a general audience. Last year we took steps to obtain advice on structure and format from researchers and practitioners in education throughout the country. Their advice is reflected in the layout and charts on these pages. The Office of Educational Research and Improvement also published a special edition<sup>2</sup> of the 1987 *Condition* in a style virtually identical with this 1988 report, although it focused on elementary and secondary education. It was widely praised and strongly influenced our new presentation this year. Specifically, we have adopted a more journalistic style in the narratives and have placed the tables supporting each indicator chart in the appendix.

I hope you find the material helpful and invite you to send us comments on how to make future editions even more useful.

Emerson J. Elliott  
Acting Commissioner

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<sup>1</sup> Comparisons cited in the text based upon sample data are statistically significant at the 0.05 level of significance, unless otherwise stated. The larger volume also contains standard error tables for sample data.

<sup>2</sup> U.S. Department of Education, Center for Education Statistics, Elementary and Secondary Education Indicators in Brief, 1987, (Washington, D.C.: 1987).

## Acknowledgments

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Joyce D. Stern, the division's Team Leader for Indicator Development, directed the development and production of this edition. Marjorie O. Chandler, head of the Education and Employment Team, provided assistance throughout. Mary Frase Williams was consulted for technical guidance.

The following Condition of Education Division staff played important roles in producing indicators for this edition: Gayle Thompson Rogers developed and produced all but one of the new indicators in this volume. These cover spending on research and development in institutions in higher education, earnings of young adults by educational attainment, U.S. degrees earned by foreign students, degrees earned and field of study by race/ethnicity, changes in per student expenditures and tuition levels, and trends in faculty salaries. From National Assessment for Educational Progress data, Audrey Pendleton drafted the indicator on literacy among college students and graduates. Clifford Adelman of the Office of Research in OERI designed and drafted the indicator on Graduate Record Examination scores. Curtis Baker updated and redrafted the continuing indicators. Thomas Snyder provided updated information for most of the continuing indicators. Sharon A. Bobbitt provided computer expertise in transferring the manuscript on disk to the printing contractor and in designing several original indicator charts. Brenda M. Wade typed most of the supporting tables and other extensive portions of the manuscript, as well as providing substantial general secretarial support services.

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# Contents

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	Page
<b>Commissioner's Statement</b> .....	.iii
<b>Acknowledgments</b> .....	.vii
<b>Overview</b> .....	1
by Gayle Thompson Rogers	
<b>Indicators of Postsecondary Education</b> .....	11
<b>A. Outcomes</b>	
<b>Student Performance</b>	
2:1 College student achievement: Selected short-term and long-term trends .....	14
<b>Transitions</b>	
2:2 Trends in higher education attainment .....	16
2:3 Degrees conferred, by level .....	18
2:4 Bachelor's degrees conferred, by field .....	20
2:5 Advanced degrees conferred, by field .....	22
2:6 Activities of recent college graduates .....	24
2:7 Higher education spending on research and development ...	26
2:8 Earnings of young adults, by educational attainment .....	28
2:9 Degrees earned by foreign students .....	30
2:10 Degrees earned, by race and ethnicity .....	32
2:11 Field of study, by race and ethnicity .....	34
2:12 Literacy among college students and graduates .....	36
<b>B. Resources</b>	
<b>Fiscal Resources</b>	
2:13 Revenues of colleges and universities .....	40
2:14 Allocation of expenditures per student and tuition levels .....	42
2:15 Faculty salaries, by academic rank .....	44

# Contents

---

	Page
<b>G. Context</b>	
<b>Student Characteristics</b>	
2:16	College and university enrollment, by type and control of institution . . . . . 48
2:17	Selected characteristics of students in higher education . . . . . 50
2:18	College enrollment, by selected age groups . . . . . 52
2:19	Enrollment patterns in higher education, by race and ethnicity . . . . . 54
<b>Tables</b>	
<b>Indicator 2:1</b>	
2:1-1	Changes in performance on Graduate Record Examinations: Long-term and short-term trends . . . . . 59
<b>Indicator 2:2</b>	
2:2-1	Years of college completed by population 25–34 years old, by race/ethnicity: 1970–1987 . . . . . 60
<b>Indicator 2:3</b>	
2:3-1	Number of degrees awarded at institutions of higher education, by level of education: Academic years ending 1971–1986 . . . . . 62
2:3-2	Percentage distribution of degrees awarded at institutions of higher education, by level of education: Academic years ending 1971–1986 . . . . . 63
<b>Indicator 2:4</b>	
2:4-1	Bachelor's degrees conferred, by field: Academic years ending 1971–1986 . . . . . 64
<b>Indicator 2:5</b>	
2:5-1	Master's degrees conferred by institutions of higher education, by field: Academic years ending 1971–1986 . . . . . 67
2:5-2	Doctor's degrees conferred by institutions of higher education, by field: Academic years ending 1971–1986 . . . . . 69

**Indicator 2:6**

- 2:6-1 Activities of recent bachelor's degree recipients 1 year after graduation, by field of study and year of graduation: Academic years ending 1980 and 1984 ..... 71

**Indicator 2:7**

- 2:7-1 Research and development (R&D) expenditures at doctorate-granting institutions, by source of funds: Fiscal years 1972-1986 ..... 73

**Indicator 2:8**

- 2:8-1 Median earnings and earnings ratios of year-round, full-time workers 25-34 years old, by educational attainment and by race and sex: 1978-1987 ..... 74

**Indicator 2:9**

- 2:9-1 Total degrees and percent earned by foreign students, by field of study and degree level: Selected academic years ending 1977-1985 ..... 75
- 2:9-2 Postgraduation plans of foreign doctorate recipients with temporary U.S. visas, by major field: Academic years ending 1976-1986 ..... 77

**Indicator 2:10**

- 2:10-1 Degrees earned, by race/ethnicity and degree level: Selected academic years ending 1977-1985 ..... 78
- 2:10-2 Associate degrees earned, by race/ethnicity: Academic year ending 1985 ..... 79
- 2:10-3 Degrees earned by black, non-Hispanic men and women, by level of degree: Selected academic years ending 1977-1985 ..... 80

# Contents

---

	Page
<b>Indicator 2:11</b>	
2:11-1 Percentage distribution of field of study, by degree level and race/ethnicity: Academic years ending 1977 and 1985 .....	81
2:11-2 Number of degrees earned, by field of study, degree level, and race/ethnicity: Academic years ending 1977 and 1985 .....	86
<b>Indicator 2:12</b>	
2:12-1 Average scale scores of white, non-Hispanic young adults aged 21 to 25 on the prose, document, and quantitative literacy scales, by educational attainment and enrollment status: 1985 .....	91
2:12-2 Percent of white, non-Hispanic young adults aged 21 to 25 at or above scale levels on the prose, document, and quantitative literacy scales, by educational attainment and enrollment status: 1985 .....	92
<b>Indicator 2:13</b>	
2:13-1 Percentage distribution of general education revenues of higher education, by control and level of institution and source of revenue: Fiscal year 1986 .....	93
2:13-2 General education revenues (in current dollars) for institutions of higher education, by control of institution and source of revenue: Selected fiscal years 1976-1986 .....	95
2:13-3 General education revenues (in constant 1986 dollars) for institutions of higher education, by control of institution and source of revenue: Selected fiscal years 1976-1986 .....	97
<b>Indicator 2:14</b>	
2:14-1 Index of expenditures (in constant dollars) per full-time-equivalent student at public institutions of higher education, by type of institution: Academic years ending 1977-1986 .....	99
2:14-2 Index of expenditures (in constant dollars) per full-time-equivalent student at private, nonprofit institutions of higher education, by type of institution: Academic years ending 1977-1986 .....	101

	Page
2:14-3	Index of average undergraduate tuition charges (in constant dollars) at institutions of higher education, by type and control of institution: Academic years ending 1977-1986 ..... 103
<b>Indicator 2:15</b>	
2:15-1	Average faculty salaries (in constant 1985-86 dollars) in institutions of higher education, by academic rank and control and type of institution: Academic years ending 1972-1986 ... 104
2:15-2	Average faculty salaries (in current dollars) in institutions of higher education, by academic rank and control and type of institution: Academic years ending 1972-1986 ..... 106
2:15-3	Index of average salaries (current dollars) of full-time instructional faculty in institutions of higher education, by academic rank, and selected other professional occupations in medium-sized and large private firms: Academic years ending 1972-1986 (base year = academic year 1971-72) ..... 108
<b>Indicator 2:16</b>	
2:16-1	Enrollment in institutions of higher education, by type and control: Selected years, 1970-1987 ..... 109
<b>Indicator 2:17</b>	
2:17-1	Trends in total enrollment in institutions of higher education, by part-time students, women, students 25 years or older, and graduate and professional students: Selected years, 1970-1987 ..... 110
<b>Indicator 2:18</b>	
2:18-1	Population and college enrollment, by selected age groups: 1980-1986 ..... 111
<b>Indicator 2:19</b>	
2:19-1	Participation rates of 18- to 24-year-olds in higher education, by race/ethnicity: 1970-1986 ..... 112

# Overview

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## Introduction

Institutions of higher education are being challenged to prepare students to deal with the complex problems facing the country, including the demands of increasingly competitive world markets and long-term economic and technological growth. The growing emphasis on the need to evaluate what colleges teach and what college students study and learn is, at least in part, a response to these issues.

Colleges and universities also face pressure to curb increasing costs. Rising tuition levels have caused considerable concern about students' ability to afford a college education. As a result, there is growing public attention to how higher education institutions spend their money and how much they charge students in tuition and fees. Another major issue confronting these institutions concerns the enrollment of low income and minority students in higher education.

The indicators presented in this volume provide information important to the public debate of these and related issues. This overview discusses them under the following four headings: (1) context; (2) outcomes; (3) college costs and financial resources; and (4) minority participation and degree attainment. The discussion is confined to material presented in the indicators.

## Context

Enrollment and earned degree data provide information about the size and configuration of higher education. Changes in enrollment and degree attainment indicate changes in the demand for higher education and, therefore, in the use of different types of educational resources, such as programs of study, personnel, equipment, and buildings.

*Enrollment:* Enrollment in colleges and universities rose by 45 percent between 1970 and 1983, from 8.6 to 12.5 million students (*Indicator 2:16*). It dipped in 1984 but then turned upward again to reach an estimated all-time high in 1987. Growth was greatest in 2-year institutions, where enrollment more than doubled. Public institutions, which accounted for 77 percent of all higher education enrollment in 1987, increased enrollment at a faster pace than private institutions.

Decreases in the traditional college-age population have caused many analysts and college administrators to predict declining college enrollments for the 1980s and early 1990s. However, declining enrollments have not materialized to date. Despite shrinkage in the 18- to 24-year-old population, total enrollment in the Nation's colleges and universities was higher in 1987 than in 1980, partly because

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a larger percentage of this group chose to attend college (*Indicators 2:16 and 2:18*). An increase in the number of students aged 25 and older, mainly due to population growth, also helped avert a downward enrollment trend.

The composition of the student body has changed substantially since 1970 (*Indicator 2:17*). In that year, the typical college student was a male undergraduate between the ages of 18 and 24 attending full time. Between then and the mid-1980s, however, the proportion of older, female, and part-time students increased substantially. As a result, by 1987, the typical college student was a female undergraduate. And there has been an increasing probability that a student is over 25 and attending part time.

*Degree attainment:* The number of degrees awarded by American colleges and universities was nearly one-third higher in 1986 than in 1971 (*Indicator 2:3*). Growth patterns varied by type of degree. Associate degrees climbed during most of the period, accounting for 44 percent of total degree growth. Following a decline in the mid- to late 1970s, bachelor's degrees rose throughout the 1980s. The number of master's degrees awarded peaked in 1977 and then declined steadily until 1984, after which it turned upward. The number of doctor's degrees awarded remained generally stable throughout the period, but the number of first-professional degrees rose continually until 1986, when it dropped off slightly.

At both the baccalaureate and master's levels, there has been a shift over the last several years in the fields that students pursue (*Indicators 2:4 and 2:5*). The physical, biological, and social sciences, humanities, and education have become less popular. The reverse is true, however, for many occupationally oriented fields such as business and management, computer and information sciences, and engineering. The change in field of study preferences has been less pronounced and clear-cut at the doctor's level. (For further discussion of degrees awarded in the sciences and engineering, see *Outcomes: Education and the Economy*, below).

## Outcomes

A general indicator of the country's knowledge and skill levels is the amount of higher education obtained by the population. Equally important are indicators of what students learn in college and whether that educational experience makes any difference in their lives and their performance as citizens and workers. As the cost of going to college has risen and international economic competition has increased, attention to the productivity, effectiveness, and objectives of the higher education



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system has grown. The indicators discussed in this section deal, in one way or another, with the issues of educational and economic outcomes, both for individuals and for the society as a whole.

*Educational attainment:* The proportion of the American young adult population (25- to 34-year-olds) with some college education rose by more than 50 percent during the 1970s and then remained level in the 1980s (*Indicator 2:2*). In 1987, close to one-half of the young adults had attended college for at least 1 year and about one-fourth had finished 4 or more years.

*Student achievement:* National data comparing the knowledge and skills of students as they enter and then as they graduate from college are not available. Thus, it is not possible to measure directly the educational effectiveness of the college experience. Still, data from the graduate record examinations (GRE), which measure the achievement of a large but select group of college graduates applying to graduate and professional schools, provide some insight into this matter. Data on functional literacy from the National Assessment of Educational Progress (NAEP) also provide clues to what college students and graduates know.

*Indicator 2:1* displays GRE scores on general verbal and quantitative tests and on 14 subject area tests from 1964 to 1987. Student performance in scientific and technical fields is of particular interest because of increasing international competition in these fields. Over the long term (1964-1987), performance in mathematics showed a large degree of improvement, but scores for most other scientific and technical fields remained largely unchanged. More recently (1976-1987), improvement in mathematics performance has slowed and achievement in physics has declined. Engineering and quantitative skill scores, however, have improved. In nonscientific/technical areas, scores declined across the board between 1964 and 1987. The more recent trend (1976-1987) shows a slowing of the rate of decline and, in some cases, a reversal.

Functional literacy skills include the knowledge and skills needed to understand or use textual material, such as news stories, and technical documents, such as tables and maps, and to apply basic arithmetic operations to such tasks as balancing a checkbook and calculating interest on a loan. While it may not be higher education's role to teach these skills, it is instructive to look at how well college students and graduates have acquired them. NAEP data for 1985 on 21- to 25-year-olds suggest that more literate students may persist in college and that the last 2 years of college do not contribute to an increase in functional literacy skills (*Indicator 2:12*). They also show that many college graduates cannot perform upper-level literacy skills such as stating in writing an argument made in a newspaper column.

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**Post-college earnings and activities:** Insights into the influence of education on the lives of individuals are obtained partly by looking at what college graduates do shortly after graduation and how the earnings of college- and high-school-educated workers differ. Data on the activities of 1980 and 1984 bachelor's degree recipients approximately 1 year after graduation show that field of study is related to the choices graduates make between employment and further study. A much higher proportion of the graduates in technical/professional fields (engineering, business, health, education, and public affairs and social services) than in the arts and sciences were employed full time (*Indicator 2:6*). Conversely, a much higher proportion of arts and sciences graduates were enrolled in school.

Numerous studies have examined the effect of education on individuals' labor force behavior and earnings. While educators disagree about the nature and size of that effect, most agree that there is a link between the amount of education people have and their success in the labor market. *Indicator 2:8* shows that, among young adults working full time, year-round, the college-educated earned more each year from 1978 to 1987 than those with only a high school education, regardless of race or sex. The earnings advantage was greater for those with 4 or more years of college than for those with fewer years, an advantage that generally became larger during the period.

**Education and the economy:** Colleges and universities contribute to the Nation's economic development by conducting scientific and technological research and by training the workforce. Data on research and development (R&D) expenditures at higher education institutions and degrees earned by field of study provide valuable information about trends in the size of that research contribution and the training of scientists and engineers.

Research and development expenditures at doctorate-granting institutions constituted about 9 percent of total national R&D expenditures in 1986 (*Indicator 2:7*). Inflation-adjusted R&D expenditures at these institutions, which spend nearly all of the R&D funds available to higher education, grew substantially from 1972 to 1986, generally in line with growth in the total national R&D effort.

Continued R&D growth depends upon the availability of highly trained scientific and technical manpower. Between 1971 and 1986, the number of bachelor's and master's degrees awarded in the natural sciences (physical, biological, and computer sciences combined) increased (*Indicators 2:4 and 2:5*). The increase was entirely the result of tremendous growth in the computer sciences. In addition, engineering became much more popular during the period, with the rate of degree growth in this field far outpacing growth in total degrees.

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At the doctoral level, where research scientists and college faculty are trained, the number of degrees awarded in the natural sciences and in engineering decreased 15 and 6 percent, respectively, between 1971 and 1986 (*Indicator 2:5*). There is evidence of a recent halt or turnaround in this downward movement, though. In engineering, the number of earned degrees has increased steadily since 1978. Also, earned degrees in the natural sciences, although still substantially below 1971 levels, increased some in the 1980s.

The decline in the number of doctor's degrees awarded by American colleges and universities in scientific and technical fields would have been greater had it not been for the increasing presence of foreign students. While the number of U.S. citizens and resident aliens specializing in these fields at the doctoral level dropped between 1977 and 1985, the number of foreign students grew (*Indicator 2:9*). For example, the number of foreign students receiving degrees in the physical and biological sciences increased 26 percent, whereas the number of American recipients declined 2 percent. The influx of foreign students has been important in engineering as well, accounting for 92 percent of the growth.

The foreign student presence in the natural sciences and engineering has also been felt at the bachelor's and master's levels. The number of such students earning physical and biological science degrees increased between 1977 and 1985, whereas the number of Americans declined. Both groups earned more computer science and engineering degrees, but foreign students accounted for 7 percent of the growth at the bachelor's level and 40 percent at the master's level.

The declining interest of American students in basic scientific fields has created considerable concern about the country's ability to remain scientifically and technologically competitive. The fear is that an insufficient number of Americans are being trained to replace an aging scientific workforce in higher education, industry, and government.

The extent to which this is a problem depends partially on whether foreign students graduating from U.S. schools remain in this country to work after completing their degrees. Data on the post-degree plans of new foreign doctorate recipients suggest that many of them take jobs or pursue postdoctoral study here, and that the proportion doing so has increased in the last several years (*Indicator 2:9*). In 1986, 37 percent of all foreign doctoral students receiving degrees in the natural sciences and engineering had specific plans to work or study in the United States, at least temporarily. Only 26 percent had had such plans 10 years earlier.

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## College Costs and Financial Resources

Current concerns about the financing of higher education have focused on several interrelated issues pertaining to tuition levels, expenditures, and revenue sources. The following questions are among those being asked: Have colleges relied more and more on tuition and fees as a source of revenue? What proportion of expenditures is spent on instruction and research as opposed to other functions, such as administration? Have faculty salaries, an important component of instructional expenditures, kept pace with inflation? Several indicators in this volume address these questions and thus provide insights into the nature and magnitude of trends in the price and costs of higher education.

*Tuition charges:* Following declines in the late 1970s, average undergraduate tuition charges, adjusted for inflation, rose sharply at all types of public and private institutions, particularly the latter, during the first half of the 1980s (*Indicator 2:14*). At private institutions, tuition increases were accompanied by substantial growth in expenditures for scholarships and fellowships. In fact, for the 1977–1986 period as a whole, these expenditures grew proportionately more than tuition and fees.

*Institutional revenues and expenditures:* Higher education revenues, after accounting for inflation, were substantially higher in 1986 than in 1976 (*Indicator 2:13*). Growth occurred throughout the 10-year period at private institutions but mainly after 1984 at public ones. Over the period, the relative importance of different revenue sources remained about the same at both public and private institutions. Private institutions were heavily dependent on tuition and fees. In 1986, like 10 years earlier, a little more than one-half of the revenue at private 4-year institutions and two-thirds at private 2-year institutions came from this source. Public institutions depended much less heavily on tuition and fees, instead relying primarily on State and local government appropriations for the bulk of their revenues.

With few exceptions, all types of expenditures per full-time-equivalent (FTE) student, after accounting for inflation, were higher in 1986 than in 1977. This was true at all types of public and private colleges and universities (*Indicator 2:14*). Much of the increase occurred in the mid-1980s. Administrative expenses, up sharply, especially at private institutions, increased proportionately more than instructional expenses. Expenditures for research, an important function of higher education, were higher in 1986 than in 1977 at both public and private universities and other 4-year institutions, particularly public ones. At private universities, however, these expenditures had dropped dramatically through the late 1970s and early 1980s and only recently have exceeded 1977 levels. A similar, though less-pronounced and

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clear-cut, trend occurred at private 4-year institutions other than universities.

Inflation-adjusted faculty salaries for all professorial ranks, an important component of higher education costs, declined substantially from 1973 to 1981 at all types of public and private institutions (*Indicator 2:15*). Between the early 1980s and 1986, the latest year for which data are available, these salaries climbed steadily upward, but not enough to compensate for earlier losses.

## Minority Participation and Degree Attainment

There is considerable debate about higher education's success in reaching out to racial and ethnic minorities. Indicators of racial/ethnic similarities and differences in college participation and completion rates, degree attainment, and field of study are important to the debate.

Following increases in the early to mid-1970s, the proportion of black and Hispanic 18- to 24-year-olds enrolled in higher education dropped somewhat and then leveled off through the mid-1980s (*Indicator 2:19*). Reflecting earlier growth in the participation rates of 18- to 24-year-olds, minority young adults—those 25 to 34 years old—have become better educated (*Indicator 2:2*). Through much of the 1970s and into the early 1980s, growing proportions of young adult blacks and Hispanics had attended college for at least 1 year and had completed 4 or more years. White young adults also experienced educational gains over the period, but their college completion rates grew proportionately less than the rates of blacks and Hispanics. Still, whites remain much more likely than the others to attend and finish college.

Despite growing college-age and young adult populations and stable participation rates, blacks earned fewer bachelor's and advanced degrees in 1985 than in 1977 (*Indicator 2:10*). Men accounted for most of the decline. Although fewer black women earned master's degrees in 1985 than in 1977, they earned more bachelor's, doctor's and first-professional degrees, particularly the latter.

Hispanics earned more degrees in 1985 than in 1977 at all levels. The increases were generally in line with their population growth. Asians and American Indians also earned more degrees at all levels, but whites earned fewer at the master's and doctor's levels.

Students' fields of study can influence the type of jobs they get and the amounts they earn. *Indicator 2:11* shows substantial differences in field preferences by race and ethnicity. The most pronounced field of study differences in 1995 as well as

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1977 occurred in preferences for the natural sciences and engineering and for education. Natural sciences and engineering, already the most popular fields among Asians, grew even more popular with them between 1977 and 1985. These fields accounted for 42 percent of the bachelor's degrees earned by Asians in 1985, 35 percent of the master's degrees, and 56 percent of the doctor's degrees. Much smaller proportions of other racial/ethnic groups received degrees in these fields. They were about equally popular among whites, blacks, Hispanics, and American Indians, except at the doctoral level, where smaller proportions of blacks and American Indians specialized in them.

Education was by far the most popular field at the master's level among non-Asian minorities in both 1977 and 1985. Although it declined substantially in popularity between those years, it accounted for about 4 out of every 10 master's degrees earned in 1985 by blacks, Hispanics, and American Indians. At the doctoral level, education degrees constituted by far the greatest portion of total degrees earned by blacks and American Indians. Close to 45 percent of the doctoral degrees earned by these groups were in education compared with about 25 percent earned by whites and Hispanics and 8 percent by Asians.

## Conclusion

The indicators presented in this volume, while not providing a comprehensive picture of higher education, furnish important insights into the condition of the system. On the positive side, the system continued to grow in size and diversity in the 1980s. Enrollments increased despite a decline in the traditional college-age population. The total number of degrees and the number awarded to racial and ethnic minorities, except blacks, also increased. A college education continued to make an important difference in workers' earnings. Research and development expenditures at academic institutions grew considerably. And faculty salaries recaptured some of their earlier losses in purchasing power.

Some less encouraging trends have also occurred in higher education in the 1980s. Tuition increased substantially, as did most types of higher education expenditures. Fewer Americans earned degrees in scientific and engineering fields, while the foreign student presence in these fields, especially at the graduate level, grew. These trends have created concern about the country's ability to replace an aging scientific workforce and to remain competitive internationally. Finally, despite population growth and stable participation rates, the number of degrees earned

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by black Americans decreased at all degree levels, except the first-professional, with the largest decrease at the master's level.

Indicators are a valuable tool in monitoring these and other trends in higher education. Indicator development work will continue in order to fill information gaps and address new policy issues. Several new periodic surveys are in progress at the National Center for Education Statistics. These surveys will provide valuable baseline and trend data in a number of areas where little or no data currently exist. These areas include: enrollment in all postsecondary institutions; student financial-aid packaging; levels of student education-related debt; and staffing patterns at higher education institutions. The availability of these data will permit the development of new indicators in the future that will result in a much broader and more complete picture of the condition of postsecondary education.

## Indicators of Postsecondary Education

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## A. Outcomes: Student Performance

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### Indicator 2:1 College student achievement: Selected short-term and long-term trends

- **Achievement among college graduates, as measured by tests for admission to graduate school programs, has declined over the long-term (over 20 years), particularly in social sciences and humanities.**
- **More recent trends (10 years), however, show some improvement, most notably in the professional fields of engineering and education.**

Since the publication of several national reports on the quality of American higher education in 1984 and 1985, there has been growing interest in measuring the academic achievement of college students.\* At least eight States have initiated assessment programs in their public institutions of higher education, and an equal number of States are developing similar programs. National data are available from the various tests taken by students in the process of applying to graduate and professional schools. Of these, only the Graduate Record Examinations (GRE) offer the potential for historical comparisons.

The accompanying chart presents both the long-term and recent trends in student performance on selected GRE tests. The changes are expressed in Standard Deviation Units, a measure that makes achievement scores more comparable across the years and by type of test than do average scores. Over the long term (1964-87), only performance in mathematics showed a large degree of improvement, while scores for most other scientific and technical fields remained unchanged. Achievement declined in education and in the humanities and social sciences. Essentially, the greatest declines occurred in subjects requiring high verbal skills.

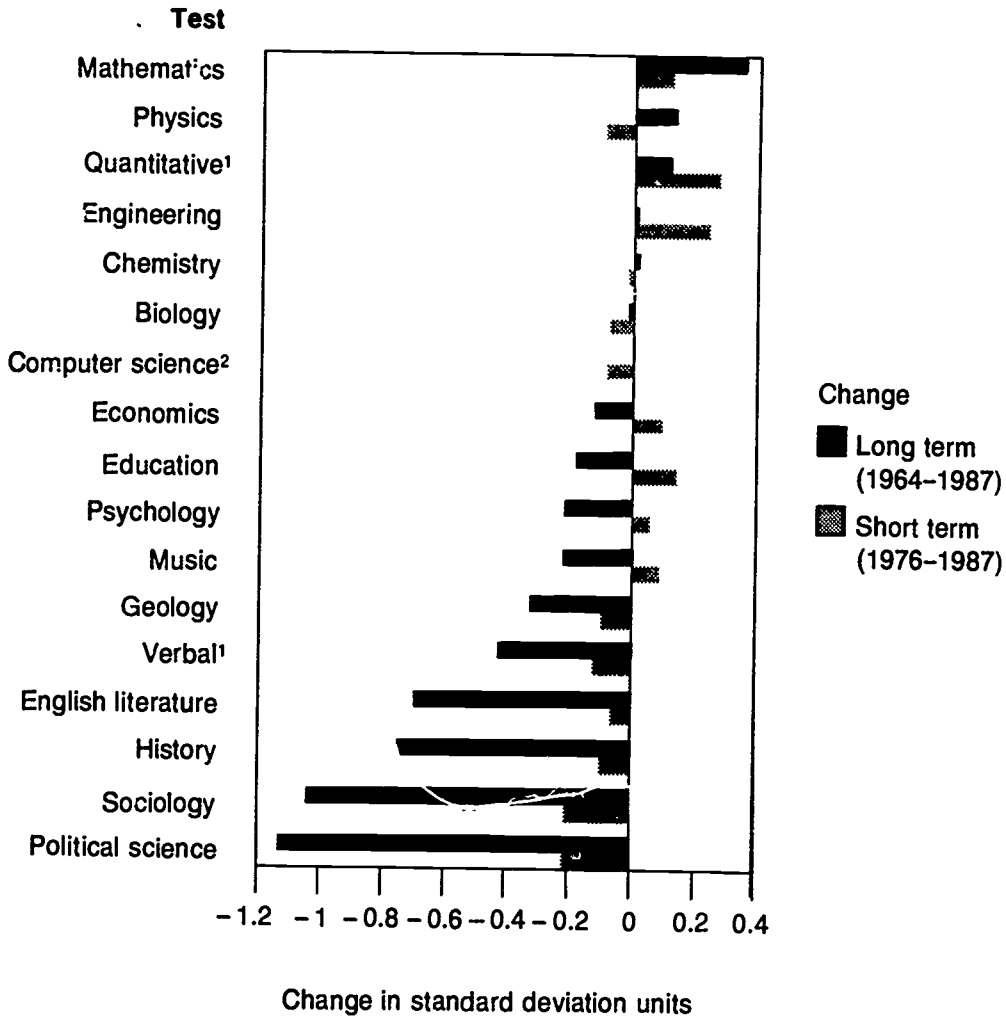
The more recent trend in test scores (1976-87) presents some encouraging divergences, particularly in view of the increased number of test-takers since 1980. The rate of decline has slowed or reversed in education, in the overall verbal test, and in most other fields that exhibited moderate or extreme long-term declines.

These data should not be interpreted as indicators of the overall quality of higher education in the United States. In general, they reflect the performance of a self-selected, though large, group of test-takers whose educational aspirations are higher than most of their peers.

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SOURCE: U.S. Department of Education, Office of Research, *The Standardized Test Scores of College Graduates, 1964-1982, 1985*; and special tabulations.

**Chart 2:1.—Long-term and short-term changes in performance on Graduate Record Examinations: 1964–1987**



<sup>1</sup> Quantitative and Verbal examinations are general examinations. All others are subject area tests.

<sup>2</sup> Tests began in 1976.

NOTE: A change in the range of -0.10 to +0.10 is really no change. Changes exceeding -0.4 or +0.4 are large.

SOURCE: Office of Research, *The Standardized Test Scores of College Graduates, 1964–1982*, 1985; and special tabulations.

## A. Outcomes: Transitions

### Indicator 2:2 Trends in higher education attainment

- The proportion of young adults (25- to 34-years old) with some college education rose more than 50 percent during the 1970s, and then remained level in the 1980s.
- In 1987, nearly 5 out of 20 young adults had completed 4 or more years of college, while more than 7 of 20 had completed at least 2 years and about 9 of 20 had completed at least 1 year.

The Nation's educational growth has an impact on its social and economic life, affecting the welfare of individuals, families, and the Nation as a whole. Trends in college attendance and completion rates indicate changes in the educational level of the country's workforce and thus provide clues to current and future socioeconomic conditions.

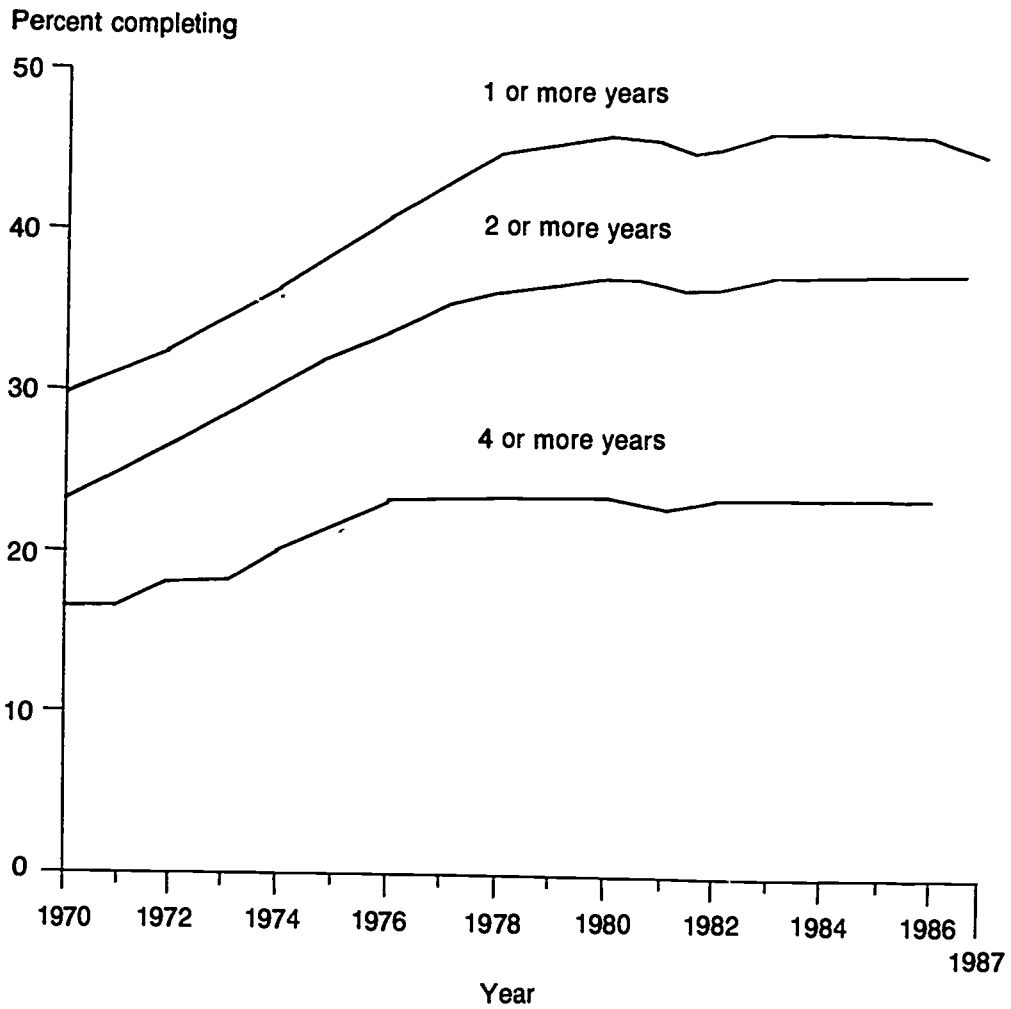
The considerable growth in educational attainment of the population 25- to 34-years old is shown below.

Year	Years of college attended		
	1 or more	2 or more	4 or more
		Percent	
1970	30	24	16
1975	39	32	21
1980	46	38	24
1987	45	38	24

Between 1970 and 1979, the proportion of black young adults who attended college doubled. (Those who had attended for at least 1 year increased from 15 to 31 percent, and those who had completed 4 or more years increased from 6 to 13 percent.) During the same period, the percentage of white young adults who had attended college also increased, but at a slower rate than that of blacks. Despite their gains, blacks are still less likely to attend college and, if they do attend, are less likely to complete 4 years than are whites.

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

**Chart 2:2. —Trends in the number of years of college completed by 25- to 34-year-olds: 1970-1987**



SOURCE: Bureau of the Census, *Current Population Reports*, various years.

## A. Outcomes: Transitions

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### Indicator 2:3 Degrees conferred, by level

- **Degrees granted by American colleges and universities at all levels increased by 31 percent between 1971 and 1986.**
- **Associate degrees showed the greatest absolute rise, increasing by 193,000, or 77 percent, during this period.**

Trends in the number of degrees conferred provide a sense of the productivity of the Nation's system of colleges and universities and provide clues to the level of trained individuals in the society. In the last 15 years, the number of degrees awarded annually rose from 1.4 million to 1.8 million; but the numbers and relative growth at each level contrasted substantially, reflecting changing interests and educational goals of students as well as changing needs of prospective employers.

Between 1971 and 1986, the number of bachelor's degrees conferred rose from nearly 840,000 to nearly 988,000, but this growth was not steady. The number of degrees had climbed to almost 946,000 in 1974, but this rise was followed by a period of declining numbers until 1980, when a steady upswing began. The number awarded in 1986 represented an all-time high. Nevertheless, because of greater relative growth at other levels, bachelor's degrees accounted for only 54 percent of all degrees conferred that year, a drop from 60 percent in 1971.

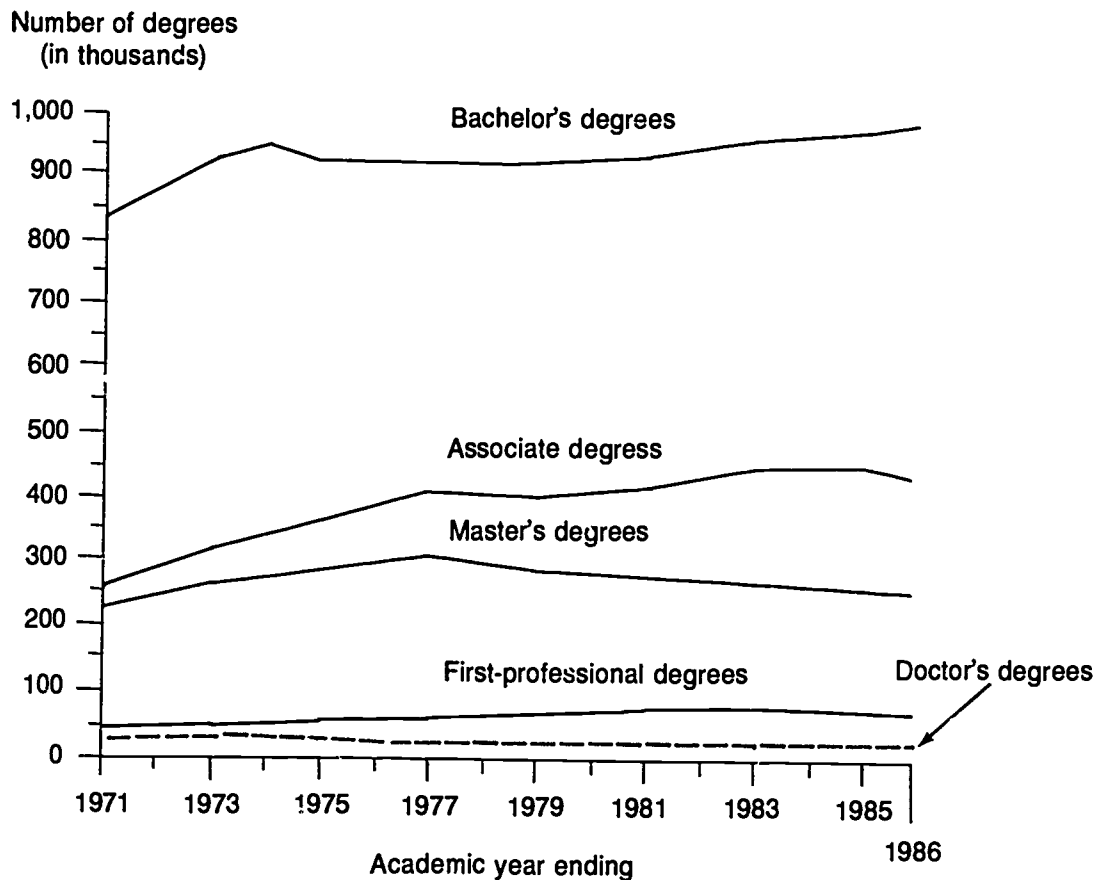
Associate degrees conferred, in rising from 253,000 to 446,000 during the period, increased their percentage of the total from 18 to 24 percent. Similarly, by nearly doubling the number of degrees granted, the first-professional level also increased its proportion of the total, going from 2.7 to 4.0 percent (38,000 to 74,000 awarded). While Master's degrees, as a proportion of the total, declined from 17 to 16 percent, their absolute numbers increased from 231,000 to 289,000 over this period. Doctor's degrees changed very little in number, varying from a low of 32,000 in 1971 to a high of 35,000 in 1973. Their share of the total declined from 2.3 to 1.8 percent.

While the number of bachelor's degrees awarded in 1986 was the greatest to date, the number of degrees at other levels that year represented declines from previous highs. Associate degrees fell 2.3 percent after 1983 and first-professional degrees 1.5 percent after 1985. There were 9 percent fewer master's degrees in 1986 than in 1977 and 3 percent fewer doctorates than in 1973.

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SOURCE: U. S. Department of Education, National Center for Education Statistics, *Digest of Education Statistics, 1988* (based on the HEGIS survey Degrees and Other Formal Awards Conferred, various years).

**Chart 2:3.—Trends in the number of degrees awarded at colleges and universities, by level: Academic years ending 1971–1986**



SOURCE: U.S. Department of Education, National Center for Education Statistics, Degrees and Other Formal Awards Conferred surveys, various years.

## A. Outcomes: Transitions

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### Indicator 2:4 Bachelor's degrees conferred, by field

- **The number of bachelor's degrees awarded in the arts and sciences fell by 75,000 between 1970-71 and 1985-86, while the number of technical and professional degrees rose by 224,000.**
- **Technical and professional degrees increased from 50 percent of all degrees conferred in academic year 1970-71 to over 65 percent in 1985-86.**

Over the years, students have tended to shift the emphasis of their studies away from some fields and toward others. Such shifts, reflected in the numbers of bachelor's degrees awarded in particular fields, can profoundly affect demand for courses and the supply in various job markets. For this reason, employers seeking job applicants, college administrators planning future programs, analysts tracking employment trends, and others keenly follow the trends in bachelor awards.

In recent years, the proportion of students receiving bachelor's degrees in the traditional arts and sciences has declined generally, although a small upturn occurred in 1985-86. This decline has been heavily concentrated in the social sciences (including psychology), where the number of degrees has fallen by 59,000 (30 percent) since 1970-71. The number of physical and biological sciences degrees (including mathematics) dropped by 5,000 (7 percent), and humanities degrees declined by 11,000 (8 percent).

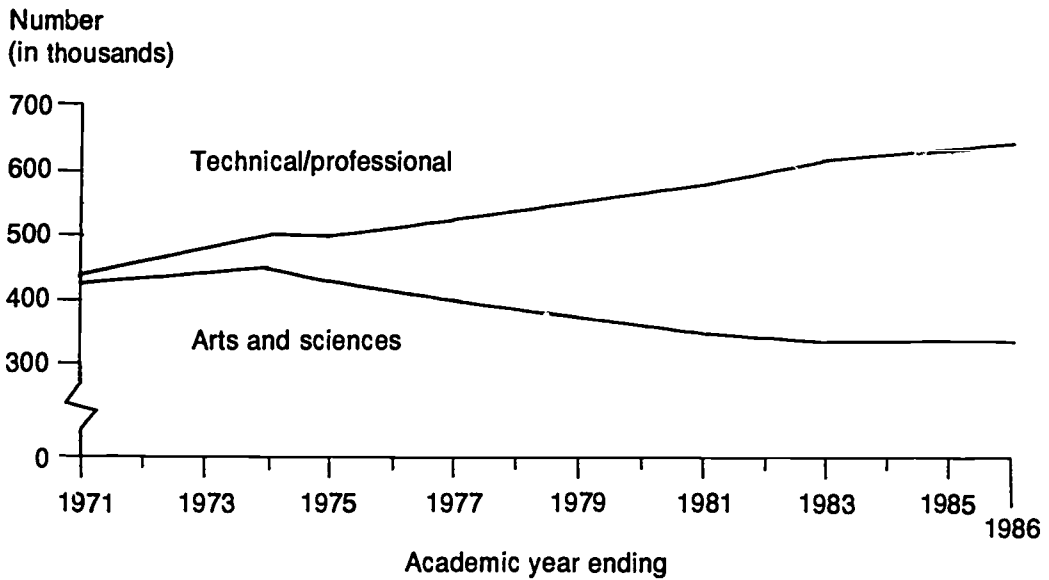
During the same period, the number of degrees awarded in several other fields rose: business by 123,000 (107 percent), computer and information sciences by 40,000 (1,654 percent), and engineering and engineering technologies by 46,000 (92 percent). These increases were partially offset by an 89,000 (51 percent) decline in the number of education degrees conferred.

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SOURCE: U.S. Department of Education, National Center for Education Statistics, *Digest of Education Statistics, 1988* (based on the HEGIS survey Degrees and Other Formal Awards Conferred, various years).



**Chart 2:4.—Trends in the number of bachelor's degrees conferred, by field:  
Academic years ending 1971-1986**



SOURCE: Center for Education Statistics, *Digest of Education Statistics, 1988*.

## A. Outcomes: Transitions

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### Indicator 2:5 Advanced degrees conferred, by field

- In the past decade, the distribution of master's degrees by field has changed markedly; degrees in education have fallen dramatically, while those in business have increased greatly.
- At the doctoral level, the number of degrees in engineering and the physical and biological sciences has declined, while the number in most other fields has increased.

Trends in students' fields of concentration can provide important information on changing student interests and on students' responses to changing labor markets. They may also provide clues about ongoing or future changes in the demand for faculty in different disciplines.

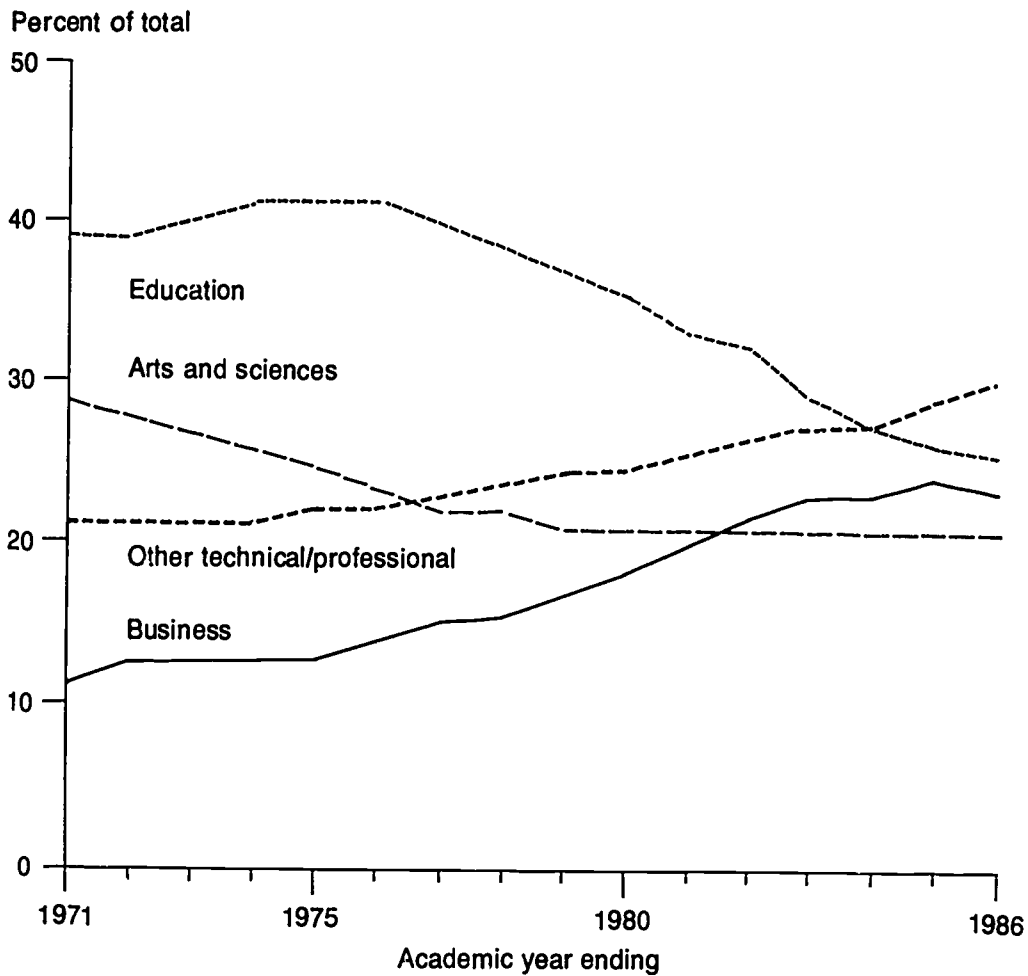
Since academic year 1976-77, a peak year for the total number of master's degrees awarded, degrees in arts and sciences have declined 15 percent. This decline has been experienced by all three broad sectors of the arts and sciences—physical and biological sciences, social sciences, and humanities. At the same time, the number of master's degrees in the technical/professional area has decreased 7 percent, but this decline has not been uniform among the technical/professional fields. While the number of degrees in education was dropping 40 percent, the total degrees awarded in the other technical/professional fields were increasing by 27 percent. Master's degrees in business rose by 45 percent and those in engineering by 33 percent. Although the percentage of degrees in education has declined while degrees in other technical/professional fields have increased, education remains the largest single field of study at that level, accounting for over one quarter of all degrees.

The total number of doctor's degrees conferred annually changed very little between 1971 and 1986. However, while the number of degrees in most fields (social sciences, humanities, business, and education) increased, there were significant declines in engineering and the physical and biological sciences. Engineering degrees declined by 6 percent, life sciences by 8 percent, physical sciences by 19 percent, but doctoral degrees in mathematics dropped by 38 percent.

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SOURCE: U.S. Department of Education, National Center for Education Statistics, *Digest of Education Statistics, 1988* (based on the HEGIS survey Degrees and Other Formal Awards Conferred, various years).

**Chart 2:5. — Trends in the percent of master's degrees conferred, by selected field:  
Academic years ending 1971–1986**



SOURCE: National Center for Education Statistics, Degrees and Other Formal Awards Conferred survey, various years.

## A. Outcomes: Transitions

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### Indicator 2:6 Activities of recent college graduates

- Approximately 1 year after obtaining a bachelor's degree, the proportion of graduates working full-time was substantially greater for technical/professional majors than for arts and science majors.
- Arts and science majors were more often enrolled in school (of all types) and not working full-time than were technical/professional majors.
- Graduates in 1980 and 1984 displayed similar patterns of work and postsecondary enrollment.

What college graduates do shortly after graduation is one measure of the outcomes of higher education. It may also indicate the characteristics and objectives of the undergraduate curriculum. Undergraduate majors in certain fields typically pursue more formal education before taking full-time work. Other fields, offering specific job-related training, show much higher levels of employment immediately after graduation.

The National Center for Education Statistics surveyed two groups of college graduates 1 to 2 years after receiving their bachelor's degrees. Graduates of 1979–80 were surveyed in 1981, and graduates of 1983–84 were surveyed in 1985. Two trends emerged:

- graduates in technical/professional fields (engineering, business, health, education, and public affairs and social services) had higher rates of employment but lower rates of school enrollment than graduates of arts and science fields; and
- little change in either area has occurred over this time period.

One fourth of all arts and science majors were enrolled in school and not working full-time 1 or 2 years after graduation. This proportion approximately tripled that of undergraduate majors in technical/professional fields with the same pattern of work and study activities.

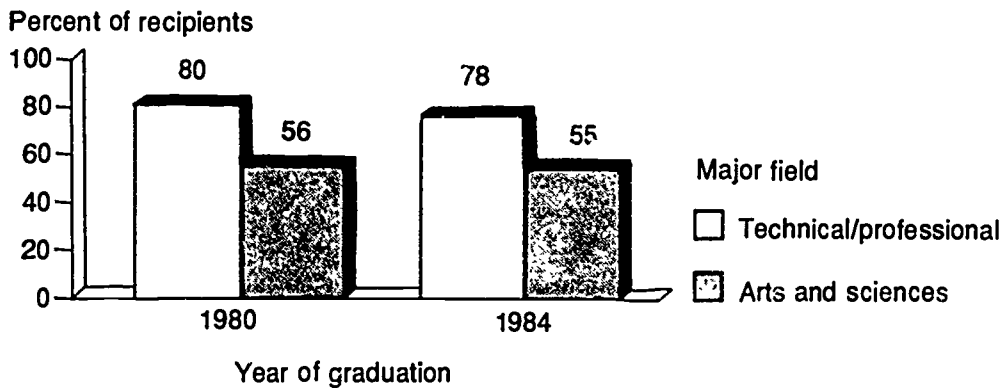
More than one half (55 percent) of all arts and science majors were employed full-time 1 or 2 years after receiving their bachelor's degrees in 1983–84. This proportion was considerably lower than the 78 percent full-time employment rate for undergraduate majors in the technical/professional fields during the same time period after graduation.

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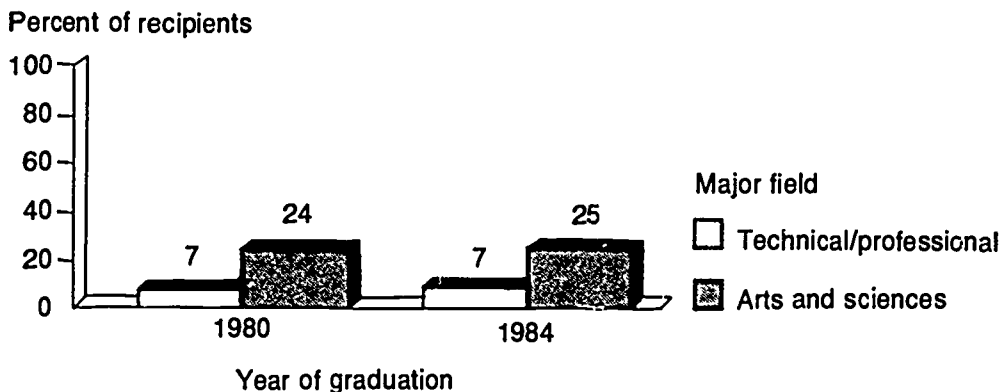
SOURCE: U.S. Department of Education, National Center for Education Statistics, Recent College Graduates Survey, various years, unpublished tabulations.

**Chart 2:6.—Activities of recent bachelor's degree recipients, by major field and year of graduation: Academic years ending 1980 and 1984**

**Graduates working full time**



**Graduates enrolled, not working full time**



SOURCE: National Center for Education Statistics, Recent College Graduates survey, various years.

## A. Outcomes: Transitions

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### Indicator 2:7 Higher education spending on research and development

- **Doctorate-granting institutions spent substantially increasing amounts on research and development (R&D) between fiscal years 1972 and 1986, after accounting for inflation.**
- **These institutions' share of total U.S. spending on R&D remained the same in 1986 as in 1972 (9 percent).**
- **The Federal government remains the primary source of R&D expenditures at academic institutions, but its role has declined somewhat.**

The Nation's institutions of higher education are an important source of new scientific and technological knowledge. Much of this knowledge comes from doctorate-granting institutions, which spend nearly all the R&D funds available to higher education. The condition of the R&D effort at those institutions is therefore viewed by many as vital to the Nation's economic health and its competitiveness in world markets.

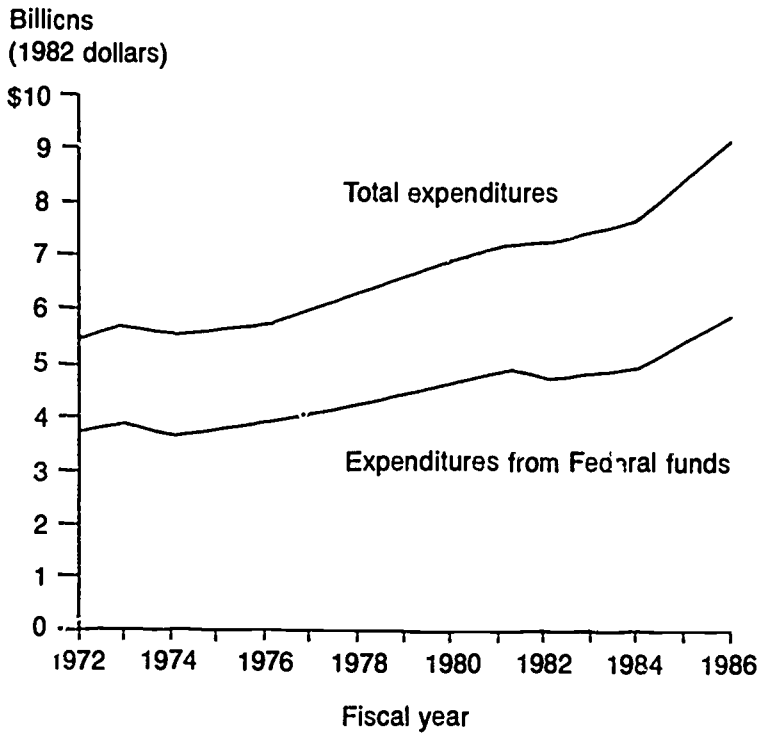
Between fiscal years 1972 and 1986, constant dollar R&D expenditures at doctorate-granting institutions increased by two-thirds. Growth occurred throughout most of the period, with a slight decline in 1974 and a slowdown in the early 1980s. For the period as a whole, it paralleled growth in the total national R&D effort, with academic R&D expenditures remaining at about 9 percent of the total. As a proportion of the gross national product (GNP), academic R&D expenditures were at about the same level (about 0.2 percent) throughout the period.

Federal funds remain by far the largest source of academic R&D expenditures and increased during the 1972-86 period by over 50 percent after inflation. Still, the relative importance of Federal funds dropped and institutions shifted to a greater reliance on industry and institutional funds. Federal funds constituted 62 percent of the R&D expenditures at doctorate-granting institutions in 1986, down from 68 percent in 1972. Funds from State and local governments also declined as a percent of the total during this time. Industry funds, however, increased from 3 to 6 percent and institutional funds from 12 to 17 percent of the total.

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SOURCE: National Science Board, *Science Indicators: The 1985 Report*, 1985. National Science Foundation, *Early Release of Summary Statistics on Academic Science/Engineering Resources*, October 1987 (based on Scientific and Engineering Expenditures at Universities and Colleges survey, various years).

**Chart 2:7.—Trends in research and development expenditures at doctorate-granting institutions: Fiscal years 1972–1986**



Source: National Science Foundation, Scientific and Engineering Expenditures at Universities and Colleges survey, various years.

## A. Outcomes: Transitions

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### Indicator 2:8 Earnings of young adults, by educational attainment

- Among young adults working full-time, year-round, the college-educated generally earned more annually during the 1978–87 period than those who had completed only 4 years of high school, regardless of race or sex.
- The earnings advantage of the college-educated was more pronounced among those who had completed 4 or more years of college than among those who had only completed 1–3 years.

Numerous studies have examined the effect of education on an individual's earnings potential.<sup>1</sup> There is considerable disagreement about how education affects earnings, how big that effect is, and the influence of other factors, such as innate ability and socioeconomic status. Still, most agree that there is a link, whether direct or indirect, between the amount of education one receives and one's earnings.

From 1978 to 1987, college-educated young adults, regardless of race or sex, earned more than young adults with only a high school education.<sup>2</sup> This earnings gap was greater for those who had completed 4 or more years of college than for those who had only completed 1–3 years. To illustrate, in 1987, whites with 4 or more years of college earned 41 percent more than whites with 4 years of high school, whereas those with 1–3 years of college earned only 16 percent more. These findings are in line with those of a recent Bureau of the Census study showing that, in 1984, highly educated people generally earned more than less-educated people.<sup>3</sup>

The earnings advantage of college-educated young adults with at least 4 years of college generally grew larger as the 1978–87 period progressed. This upward trend was most pronounced among women and occurred among blacks only during the latter part of the period.

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<sup>1</sup> Gordon K. Douglass, "Economic Returns on Investments in Higher Education," in Howard R. Bowen (ed.), *Investment in Learning: The Individual and Social Value of American Higher Education* (Washington, D.C.: Jossey-Bass Publishers, 1977), 359–387.

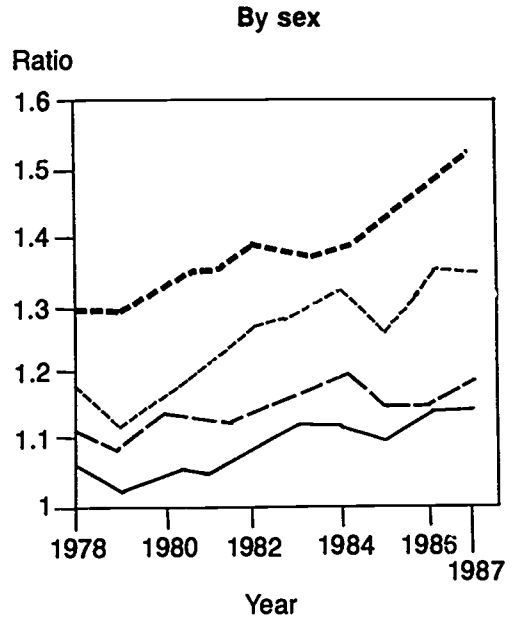
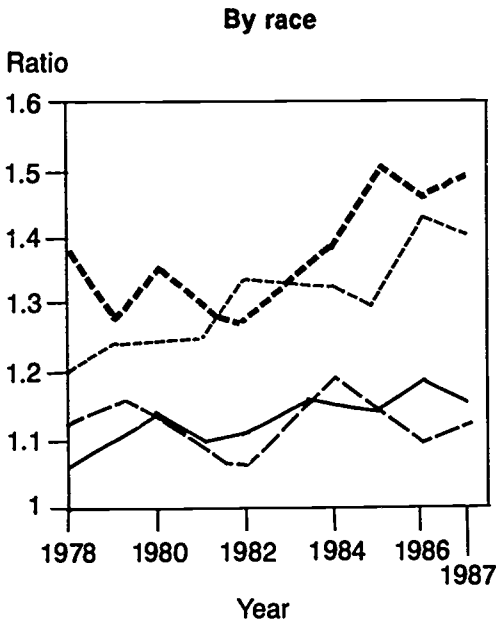
<sup>2</sup> The young adults discussed here were 25- to 34-year-old black, white, male and female full-time, year-round workers.

<sup>3</sup> U.S. Department of Commerce, Bureau of the Census, "What's It Worth? Educational Background and Economic Status: Spring 1984," *Current Population Reports*. Series P-70, No. 11. (Washington, D.C., 1987).

SOURCE: U.S. Department of Commerce, Bureau of the Census, Current Population Survey, March of various years, unpublished tabulations.



**Chart 2:8.--Trends in the ratio of earnings of persons with 1-3 and 4 or more years of college to those with 4 years of high school, by race and sex (full-time, year-round workers 25 to 34 years old): 1978-1987**



- Black, 4 or more years of college
- White, 4 or more years of college
- Black, 1-3 years of college
- White, 1-3 years of college

- Women, 4 or more years of college
- Men, 4 or more years of college
- Women, 1-3 years of college
- Men, 1-3 years of college

SOURCE: Bureau of the Census, Current Population Survey, March of various years, unpublished tabulations.

## A. Outcomes: Transitions

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### Indicator 2:9 Degrees earned by foreign students

- From 1977 to 1985, foreign students earned an increasing proportion of the bachelor's and graduate degrees awarded by American colleges and universities.
- The presence of foreign students is most pronounced at the master's and doctor's levels, particularly in the natural sciences and engineering, where they earned about 1 out of every 4 degrees in 1985.

The size of the foreign student population in the Nation's colleges and universities is significant for several reasons. It can affect enrollment levels and in turn influence the use of material, personnel, and financial resources, both the amount used and how they are allocated. It may also affect U.S. economic competitiveness, depending on whether students stay in this country to work or conduct postdoctoral research or whether they return to their homelands.

Between academic years 1976-77 and 1984-85, the number of foreign students<sup>1</sup> graduating from American institutions rose substantially at all degree levels. Much of this increase occurred in the natural sciences and engineering,<sup>2</sup> but considerable growth took place in nonscientific fields as well. In contrast to foreign students, the number of Americans receiving master's and doctor's degrees declined and the number receiving baccalaureate degrees increased comparatively little.

An important question in assessing the economic impact of foreign students is whether they return to their countries after receiving their degrees or remain in this country for further study or work. Of those earning doctorates in the natural sciences and engineering in 1986, over one-third had definite plans to stay in the United States at least temporarily.<sup>3</sup> Just over one-fourth had such plans 10 years earlier. Of those planning to stay in this country in 1986, about 4 in 10 had jobs and 6 in 10 planned to pursue postdoctoral study.

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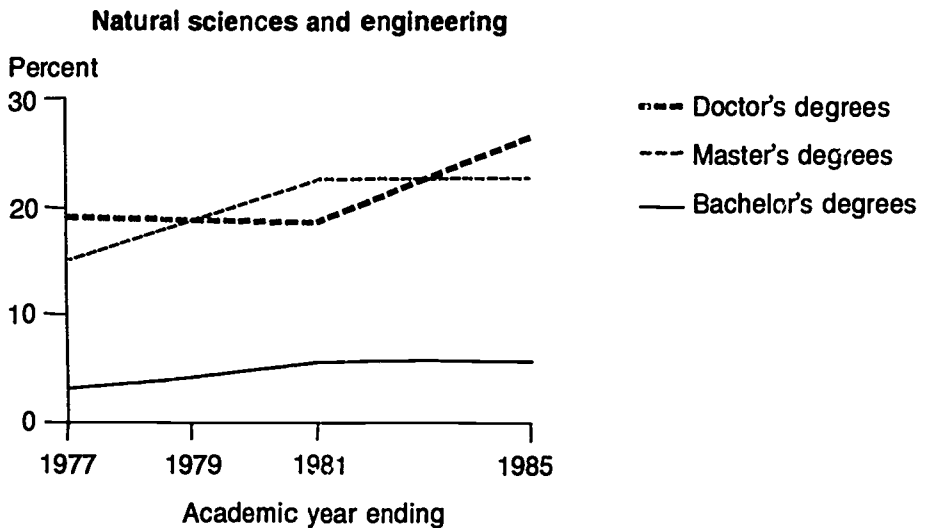
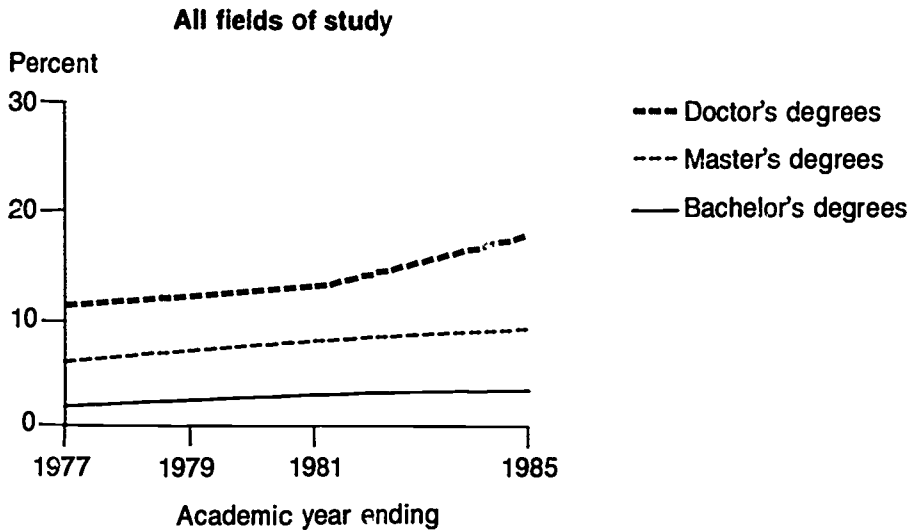
<sup>1</sup>As used here, the term "foreign students" refers to "nonresident aliens," that is, to non-U.S. citizens holding temporary visas.

<sup>2</sup>Physical and life sciences, mathematics, computer and information sciences, and engineering.

<sup>3</sup>Information on post-graduation plans is only available for doctorate recipients.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Digest of Education Statistics*, 1980, 1982, 1987, and 1988 editions (based on the HEGIS survey Earned Degrees Conferred, various years). National Science Foundation, Survey of Earned Doctorates, various years, unpublished tabulations.

**Chart 2:9.—Trends in the percent of degrees earned by foreign students in United States colleges and universities: Selected academic years ending 1977-1985**



SOURCE: National Center for Education Statistics, Degrees and Other Formal Awards Conferred survey, various years.

## A. Outcomes: Transitions

### Indicator 2:10 Degrees earned, by race and ethnicity

- Despite an increase in the young adult black population, blacks earned fewer degrees in 1985 than in 1977 at all degree levels except the first-professional.
- The number of degrees awarded to Hispanics, Asians, and American Indians/Alaskan Natives, however, was higher at all levels.

The ability of our colleges and universities to attract and retain minority students is important to the Nation's success in achieving its goal of equal opportunity. Change in the number of degrees earned by minorities in relation to their population provides one measure of higher education's progress toward this goal.<sup>1,2</sup>

Blacks earned fewer degrees in 1985 than in 1977 at all degree levels except the first-professional (e.g., M.D., J.D.). The declines are particularly significant when compared with increases in the young adult black population during the same period: it rose 7 percent among 18- to 24-year-olds and 40 percent among 25- to 34-year-olds.<sup>1</sup> Men accounted for nearly two-thirds of the drop in degrees. Below is the percent change in degrees earned by blacks between 1977 and 1985.

Degree level	Black men	Black women
Bachelor's	-8	3
Master's	-33	-34
Doctor's	-27	22
First-professional	-8	81

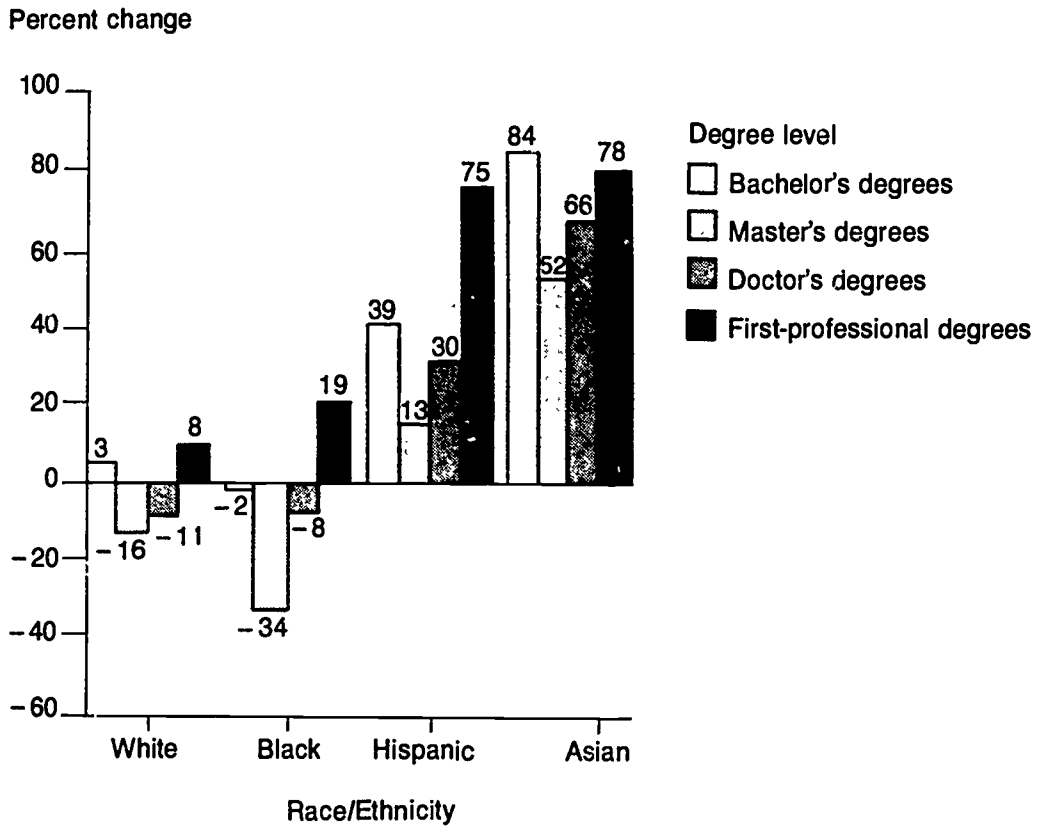
Hispanics, Asians, and American Indians/Alaskan Natives earned more degrees in 1985 than in 1977 at all levels. The increase among Hispanics in the 1980s was in line with their population growth. Between 1982 and 1986, the Hispanic population 18 to 24 years old increased 13 percent and the population 18 to 34 years old increased 20 percent.<sup>2</sup> Over the same general period (1981 to 1985), the number of bachelor's degrees earned by Hispanics grew 19 percent and the number of all degrees to Hispanics grew 17 percent.

<sup>1</sup> U.S. Department of Commerce, Bureau of the Census, "Estimates of the Population of the United States, by Age, Sex, and Race," *Current Population Reports*. Series P-25, Nos. 917 and 1,000.

<sup>2</sup> U.S. Department of Commerce, Bureau of the Census, "The Hispanic Population in the United States: March 1986 and 1987 (Advance Report)," *Current Population Reports*. Series P-20, No. 416.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Digest of Education Statistics*, 1980, 1982, 1987, and 1988 editions (based on the HEGIS survey of Earned Degrees Conferred, various years).

**Chart 2:10.—Percent change in number of degrees earned, by degree level and race/ethnicity of recipient: Academic years ending 1977 and 1985**



SOURCE: National Center for Education Statistics, Degrees and Other Formal Awards Conferred survey.

## A. Outcomes: Transitions

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### Indicator 2:11 Field of study, by race and ethnicity

- In 1985, as in 1977, the natural sciences and engineering were far more popular among Asian degree recipients than among white and other minority recipients.
- Despite substantial declines in popularity between 1977 and 1985, education remains by far the most popular field at the master's level among non-Asian minorities.

The field of study people pursue while in college is related to the jobs they get and the amounts they earn. A recent study by the Bureau of the Census, for example, showed that workers who had majored in engineering, natural sciences, or business and management generally had higher average earnings in 1984 than those who had majored in social science, education, or the humanities.<sup>1</sup> How racial and ethnic groups differ in their fields of study can provide clues to why they have different labor market experiences.

Racial/ethnic groups differ substantially in the fields they study. The most pronounced differences in 1985 as well as 1977 occurred in preferences for the natural sciences, engineering, and education.<sup>2</sup> The natural sciences and engineering were the most popular fields among Asian degree recipients. Much smaller proportions of the degree recipients from other racial/ethnic groups specialized in these fields.

Between 1977 and 1985, the number of degrees earned in these fields increased among all racial/ethnic groups, except among white and American Indian doctoral recipients. Minority gains were substantial in most cases.

During this period there was a substantial shift away from education at the bachelor's and master's levels among all racial/ethnic groups. Despite the large drop, education remains by far the most popular field among non-Asian minorities at the master's level. At the doctoral level, education degrees constitute the greatest portion of total degrees earned by blacks and American Indians.

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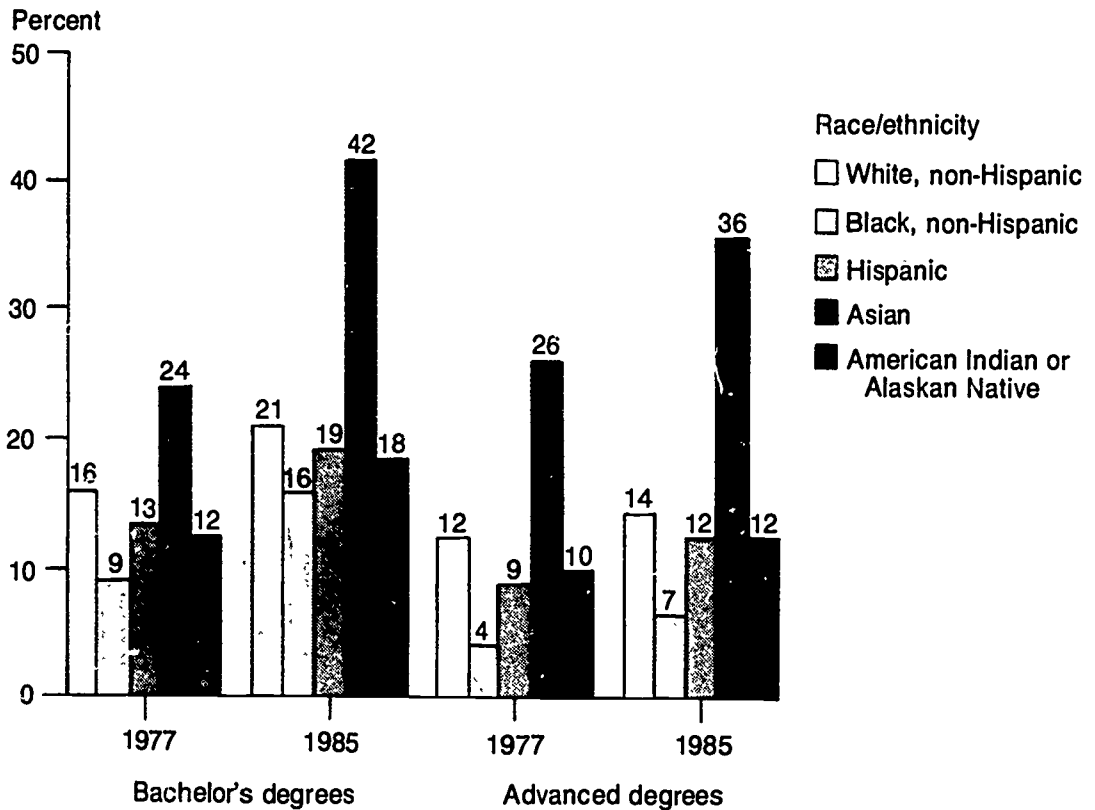
<sup>1</sup> U.S. Department of Commerce, Bureau of the Census, "What's It Worth? Educational Background and Economic Status: Spring 1984," *Current Population Reports*. Series P-70, No. 11. (Washington, D.C.: 1987), table 4.

<sup>2</sup> Natural science and engineering fields include physical and biological sciences, computer and information sciences, and engineering and engineering technologies.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Digest of Education Statistics*, 1980 and 1988 editions (based on the HEGIS survey Earned Degrees Conferred)

## Indicator 2:11

**Chart 2:11. –Percent of degrees earned in natural sciences and engineering, by race/ethnicity and degree level: Academic years ending 1977 and 1985**



SOURCE: National Center for Education Statistics, Degrees and Other Formal Awards Conferred survey.

## A. Outcomes: Transitions

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### Indicator 2:12 Literacy among college students and graduates

- Among young adults who had attended college 2 or more years but had not graduated, those still enrolled had higher functional literacy scores than those no longer enrolled.
- The literacy scores of young adults with 2 or more years of college completed who were still enrolled were similar to the scores of college graduates.

Assessing what students learn in college has been the subject of rising interest in recent years. As yet, no consensus exists on what students should learn or how to assess that knowledge across different fields and different schools. In 1985, the National Assessment of Educational Progress assessed the literacy skills of 21- to 25-year-olds, including college students and graduates. While the basic literacy skills assessed in this survey would generally not be considered college-level, they could represent a foundation needed to pursue college-level studies.

One possible conclusion based on these comparisons is that more literate students persist in college, but that the last 2 years of college do not contribute to an increase in literacy skills as measured by the prose, document, and quantitative scales. The literacy scales were defined as follows:

*Prose comprehension*—the knowledge and skills needed to understand and use information from texts that include editorials, news stories, and poems.

*Document literacy*—the knowledge and skills required to locate and use information contained in forms such as job applications, bus schedules, maps, and tables.

*Quantitative literacy*—the knowledge and skills needed to apply arithmetic operations embedded in printed materials, such as a checkbook or order form.

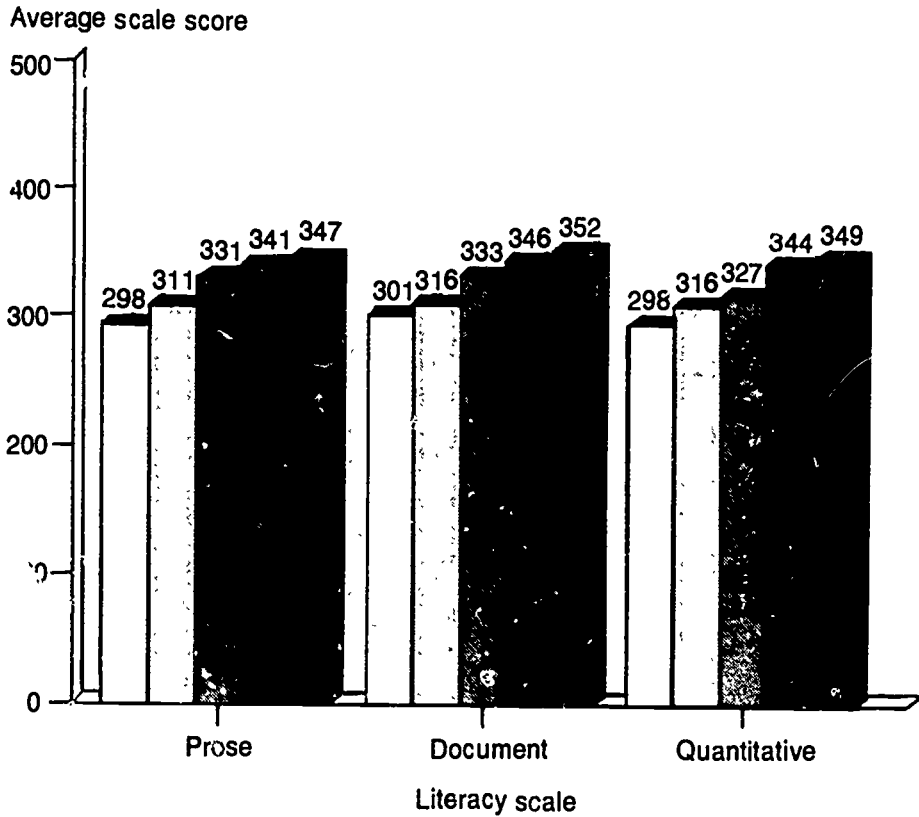
Even college upperclassmen and graduates have ample room for improving their literacy skills. Half of the young adults with a 4-year college degree performed below the upper level of the literacy scales. This level included such tasks as summarizing in writing an argument made in a lengthy newspaper column and calculating the amount of a tip for a restaurant bill using a prescribed percentage.

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SOURCE: U.S. Department of Education, National Center for Education Statistics, "Young Adult Literacy and Schooling," *Monograph*, forthcoming.



**Chart 2:12—Average scores of white, non-Hispanic young adults aged 21 to 25, by educational attainment: 1985**



**Educational attainment and enrollment status**

- High school graduate, not enrolled
- Less than 2 years college, not enrolled
- 2 or more years college, not enrolled
- 2 or more years college, enrolled
- College graduate

SOURCE: National Center for Education Statistics, "Young Adult Literacy and Schooling," *Monograph*, forthcoming.

## B. Resources:

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## B. Resources: Fiscal Resources

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### Indicator 2:13 Revenues of colleges and universities

- **State and local appropriations are the largest source of funds for public institutions (58 percent) but a negligible source (1 percent) for private institutions.**
- **Private institutions depend primarily on tuition and fees as a source of revenue (53 percent).**

This country contains a large number of colleges and universities—from community colleges, to liberal arts colleges, to professional schools, to research universities. About 1,500 of these institutions are governed by localities or by States primarily to serve their populations. Some 1,800 more are under private control, some religious and some independent. All institutions of higher education are supported by the same array of funding sources, but to widely varying degrees, depending upon whether they are publicly or privately controlled. These sources in turn are affected by a number of factors, including fluctuations in the economy and perceptions of whether investments, be they in the form of taxes, gifts or tuition payments, are yielding expected benefits—to individuals or to the country.

For public institutions, State and local appropriations were by far the most important revenue source throughout the period from 1976 to 1986. The second most important source in 1986 was government grants and contracts, most of which came from Federal sources. In the early years of the period, however, tuition and fees had been the second largest source of revenue for public institutions.

Private institutions relied heavily on tuition and fees and secondarily on government grants and contracts during the 1976–86 period. These institutions also derive a large share of their income from nongovernmental gifts, grants and contracts (14 percent) in 1986.

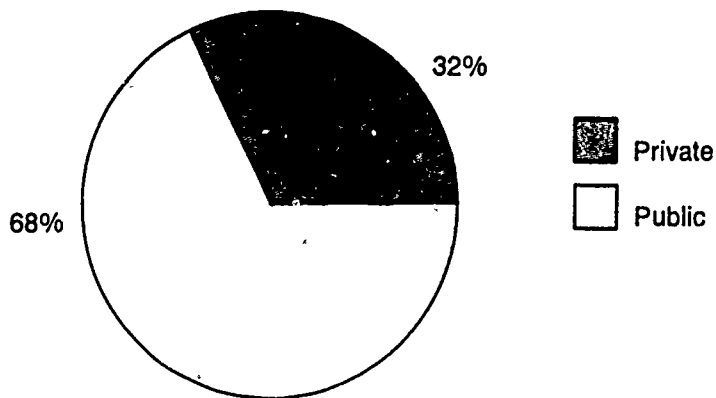
While private institutions acquired 32 percent of higher education revenues, they accounted for only 23 percent of higher education enrollment. Public 2-year institutions accounted for only 13 percent of all revenues but attracted 35 percent of the total enrollment. (See *Indicator 2:16* on enrollments.)

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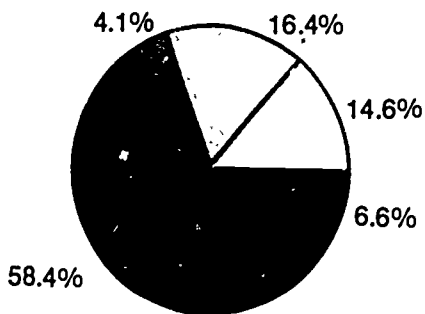
SOURCE: U.S. Department of Education, National Center for Education Statistics, *Digest of Education Statistics, 1988* (based on the HEGIS surveys Financial Statistics of Institutions of Higher Education, various years, and Fall Enrollment in Colleges and Universities, various years).

**Chart 2:13.—Shares and sources of revenues for public and private institutions of higher education: Fiscal year 1986**

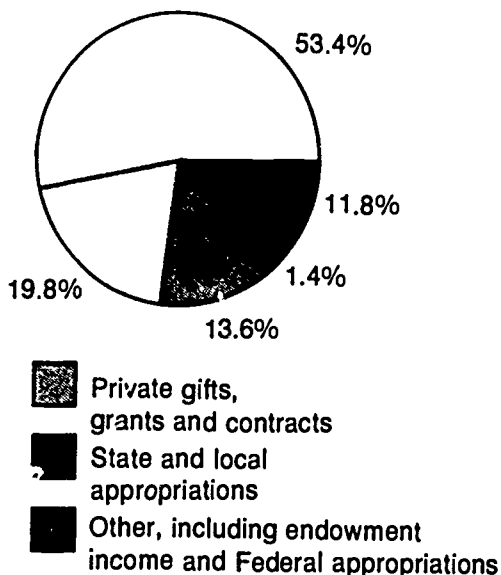
**Revenue shares, by control of institution**



**Sources of revenues for public institutions**



**Sources of revenues for private institutions**



SOURCE: National Center for Education Statistics, *Digest of Education Statistics, 1988*.

## B. Resources: Fiscal Resources

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### Indicator 2:14 Allocation of expenditures per student and tuition levels

- Expenditures for instruction, research, and administration, as well as undergraduate tuition charges, rose considerably more than inflation during the mid-1980s at both public and private universities.
- Since the early 1980s, tuition has increased proportionately more than instructional expenditures at all types of public and private colleges and universities.

Rising college tuition is of considerable concern to policymakers, educators, and students and their families. Why tuition continues to climb is a hotly debated subject. Information on where colleges and universities spend their money and how expenditure patterns have changed in relation to tuition enhances the public debate.

With few exceptions, expenditures per full-time-equivalent (FTE) student, indexed for inflation, were higher in academic year 1985-86 than in 1976-77 at all types of public and private, nonprofit institutions.\* Much of the rise has occurred since the early 1980s. Administrative expenditures grew substantially, particularly at private universities, where they were 33 percent higher in 1986 than in 1977. Expenditures on instruction also grew between those years, but less than administrative expenditures. At universities and other 4-year institutions, especially public ones, expenditures on research, a major function of higher education, also were higher in 1986 than in 1977. Expenditures for scholarships and fellowships were up sharply at all types of private institutions. They increased comparatively little at public universities, however, and actually declined at other types of public institutions.

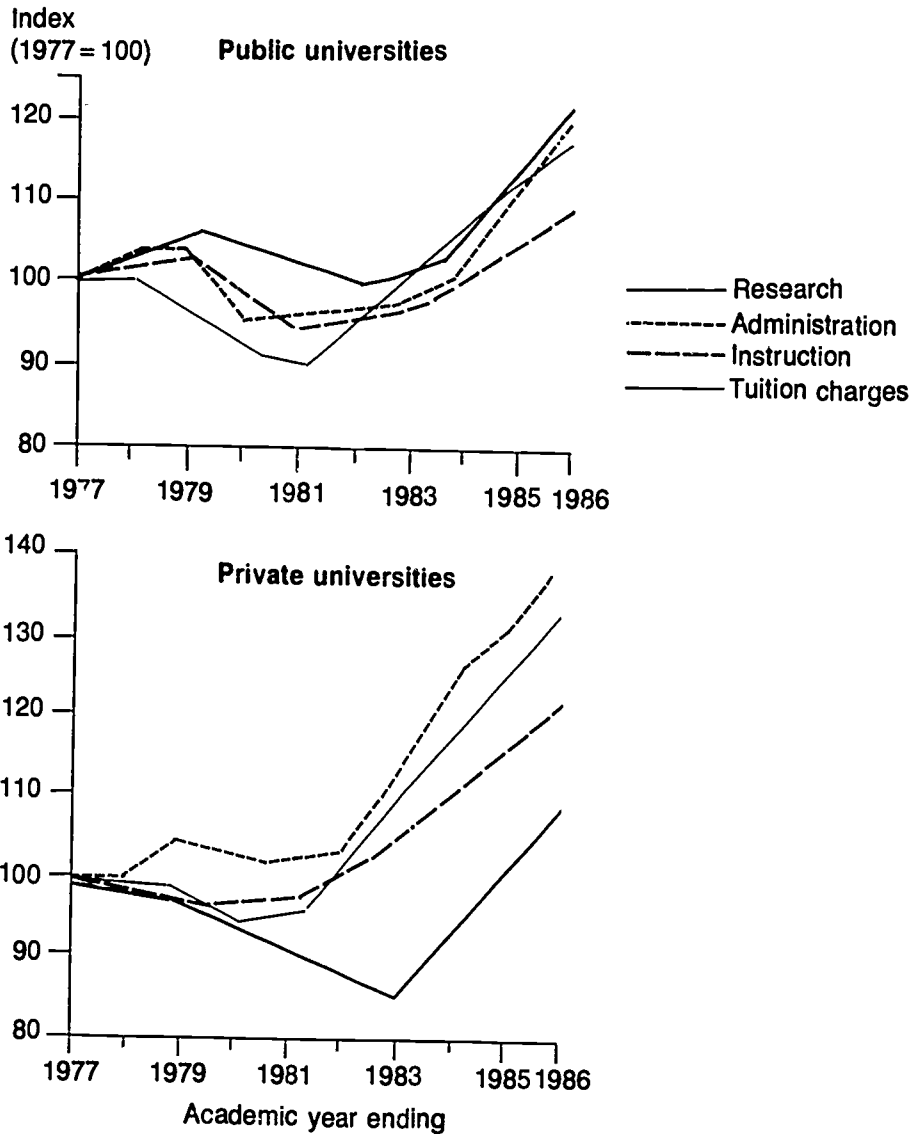
Following declines in the late 1970s, average undergraduate tuition and fees, adjusted for inflation, rose sharply at all types of public and private institutions during the first half of the 1980s. They grew proportionately more than comparable increases in instructional expenditures but, except at 2-year institutions, less than administrative expenditures. At all types of private institutions, expenditures for scholarships and fellowships grew proportionately more than tuition charges. This was not the case at public institutions, however.

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\* This indicator presents expenditure data in indexed form where 1977 = 100. For actual dollars spent, see source document described below.

SOURCE: U.S. Department of Education, Center for Education Statistics, "Recent Trends in Higher Education Finance, 1976-77 to 1985-86," *Higher Education Administrative Costs: Continuing the Study* (based on the HEGIS surveys Financial Statistics of Institutions of Higher Education, Institutional Characteristics of Colleges and Universities, and Fall Enrollment in Colleges and Universities), 1988.

**Chart 2:14.—Index of selected expenditures per full-time-equivalent student and average undergraduate tuition charges (in constant dollars) at public and private universities: Academic years ending 1977-1986**



SOURCE: National Center for Education Statistics, surveys of Institutional Characteristics of Colleges and Universities, Fall Enrollment in Colleges and Universities, and Financial Statistics of Institutions of Higher Education, various years.

## B. Resources: Fiscal Resources

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### Indicator 2:15 Faculty salaries, by academic rank

- During most of the 1970s and into the early 1980s, college faculty salaries at both public and private institutions steadily lost ground to inflation.
- Since the early 1980s, faculty salaries have consistently outpaced inflation, but recent salary increases have not been large enough to restore purchasing power to early 1970s levels.

College faculty salaries are of interest for two reasons. First, they are a cost to colleges and universities and thus affect tuition levels, taxpayer charges, and student financial aid levels. Second, they can affect higher education's ability to attract and retain qualified instructional personnel.

The salaries of full, associate, and assistant professors<sup>1</sup> more than doubled between academic years ending 1972 and 1986. After adjusting for inflation, however, they declined substantially. Between the peak in 1973 and low point in 1981 or 1982, their purchasing power dropped by a little over 20 percent. After that, inflation-adjusted salaries climbed steadily upward. However, by 1986, the latest year for which data are available, the increases had not been big enough to compensate for earlier losses. The trends outlined here occurred at public as well as private institutions and at universities, other 4-year, and 2-year institutions.

To get a perspective on changes in college faculty salaries, it is useful to compare them with changes in the salaries of other professions. During the 14-year period from 1971-72 to 1985-86, particularly in the late 1970s and early 1980s, the salaries of faculty increased more slowly than those of persons in six other professional occupations employed in medium-sized and large private firms.<sup>2</sup> The average salary of a full professor, for example, increased 130 percent over the period, whereas the average salary of an attorney increased 174 percent.

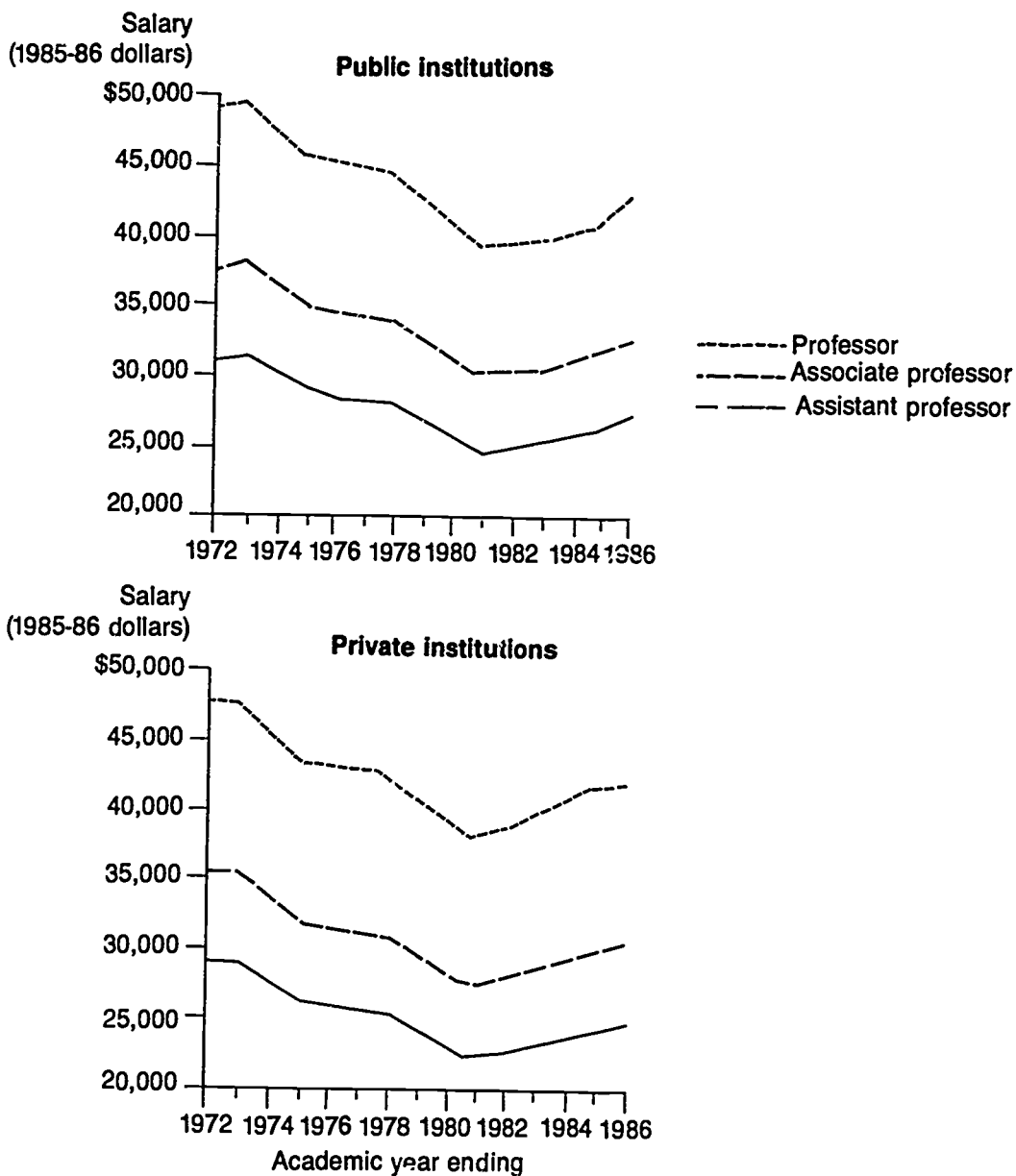
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<sup>1</sup> This indicator displays salary changes between academic years 1971-72 and 1985-86 for three categories of full-time instructional staff on 9- or 10-month contracts—full professors, associate professors, and assistant professors.

<sup>2</sup> The occupations are: accountant, auditor, attorney, chief accountant, chemist, and engineer. Medium-sized and large firms are those employing 50 or more workers.

SOURCE: U.S. Department of Education, National Center for Education Statistics, the HEGIS survey Salaries, Tenure, and Fringe Benefits of Full-Time Instructional Faculty, various years. U.S. Department of Labor, Bureau of Labor Statistics, *National Survey of Professional, Administrative, Technical, and Clerical Pay, March 1982* (Bulletin 2145) and *March 1986* (Bulletin 2271).

**Chart 2:15.—Trends in average faculty salaries, by academic rank and control of institution: Academic years ending 1972–1986**



SOURCE: National Center Education Statistics, *Salaries, Tenure, and Fringe Benefits of Full-Time Instructional Faculty* survey, various years.





## C. Context: Student Characteristics

### Indicator 2:16 College and university enrollment, by type and control of institution

- Total enrollment in colleges and universities increased by nearly 4 million (45 percent) between 1970 and 1983 and then increased by less than 1 percent from 1983 to 1987.
- Between 1970 and 1983, enrollment growth was greatest in 2-year institutions, more than doubling in size from 2.2 million to almost 4.7 million students.

Colleges and universities are regularly grouped by the predominant length of programs they offer, 2-year or 4-year, and whether they operate under public or private control. Institutions in each category address somewhat different student needs. Enrollment trends in these institutions may indicate changing demand for different types of services offered.

Between 1970 and 1983, enrollment in colleges and universities rose by 45 percent, from 8.6 million to 12.5 million. While the number of students at 4-year institutions grew by 22 percent, enrollment in 2-year institutions grew by 112 percent, reflecting, among other things, an increasing interest in higher education by the nontraditional older and part-time student. 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 and 1987 enrollments were up slightly from 1985 levels. (See *Indicator 2:18*.)

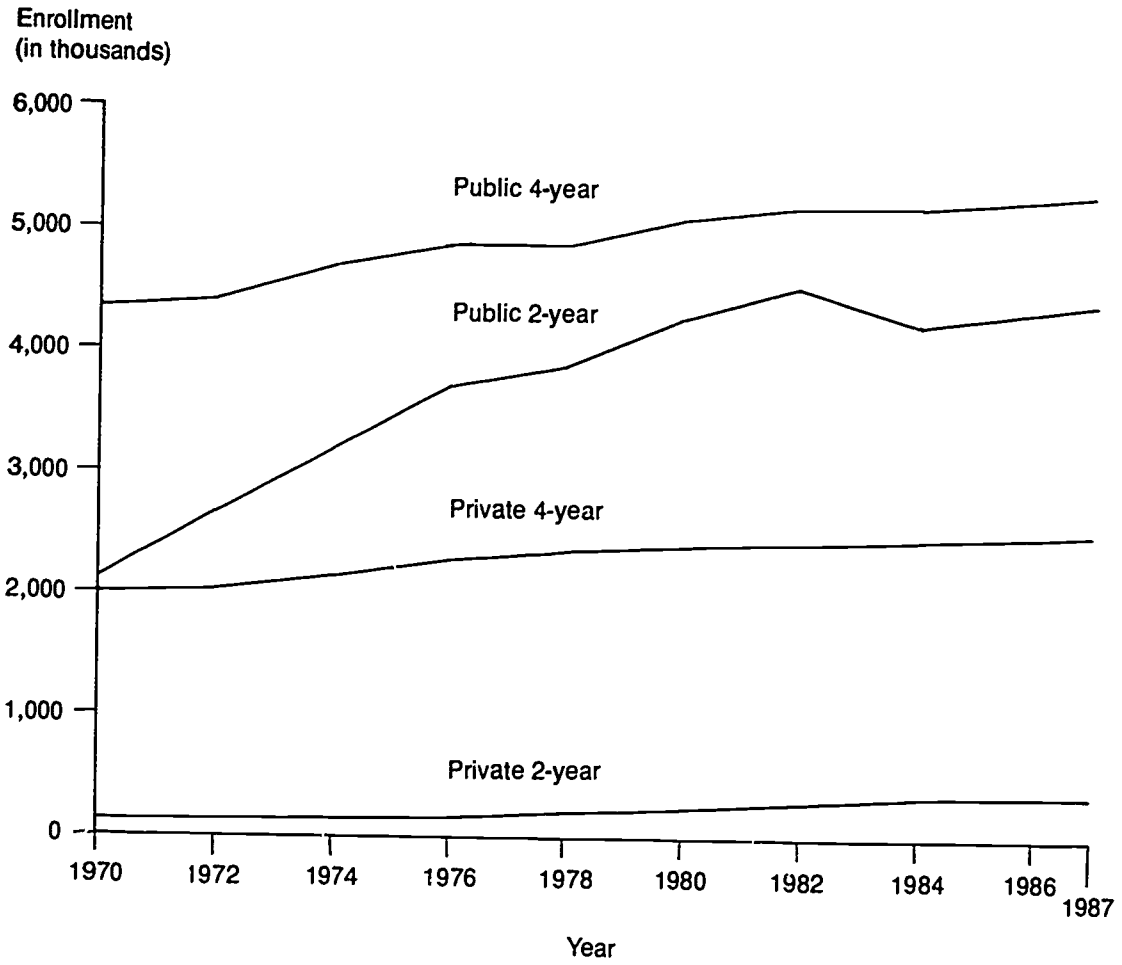
Enrollments may also be measured in full-time equivalents (FTEs). For private schools, percent changes in FTE enrollments during the 1970s and early 1980s are not considerably different from the actual enrollments presented here. For public 2-year schools, however, the 1970-83 enrollment increase in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

In 1987, public institutions accounted for 77 percent of all higher education enrollment, and 2-year colleges accounted for 38 percent of all such enrollment. (See *Indicator 2:13* on revenues for a brief comparison of the distribution of enrollment with distribution of revenues, by type and control of institution.)

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SOURCES: U.S. Department of Education, National Center for Education Statistics, *Digest of Education Statistics, 1988* (based on the HEGIS survey Fall Enrollment in Institutions of Higher Education, various years); and "National Estimates of Higher Education Statistics: 1987," *Early Estimates*, December 1987.

**Chart 2:16. – Trends in college and university enrollment, by type and control:  
Fall of selected years, 1970–1987**



SOURCE: National Center for Education Statistics, *Digest of Education Statistics*, 1988.

## C. Context: Student Characteristics

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### Indicator 2:17 Selected characteristics of students in higher education

- Between 1970 and 1987, the proportion of part-time students in institutions of higher education increased from 32 to an estimated 42 percent.
- The proportion of women enrolled also rose during that time from 41 to 53 percent.
- The proportion of students 25 years old or older rose from 28 percent in 1972 to 39 percent in 1986.

Changes in the composition of the enrollment in higher education signal changes in the larger society. For example, enrollment changes may reflect evolving needs of the labor force or a shift in the interest or ability of individuals to attend higher education.

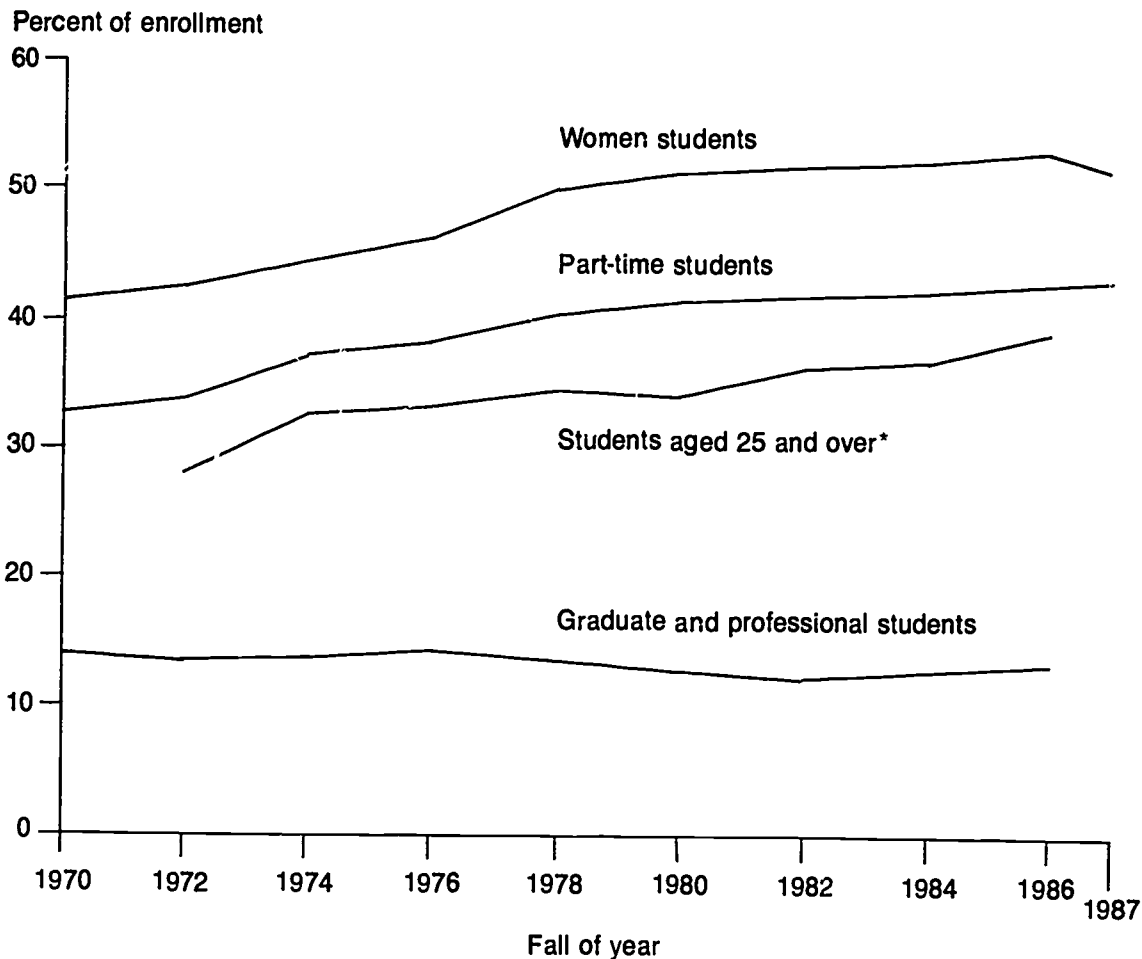
In 1970, the typical college student was a male undergraduate between the ages of 18 and 24 attending full time. From 1970 to 1987, total enrollment in higher education increased substantially. But this increase was not uniform for all sub-categories of students. While the number of typical students grew, gains were proportionally greater for part-time students, women students, and older students. However, in that time, the proportion of graduate and professional students changed little. As a result of these factors, the typical college student in 1987 was a female undergraduate, with an increasing likelihood that she was over 25 and attending part-time.

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NOTE: Data for this indicator come from a HEGIS survey of all colleges and universities. Therefore, the enrollment figures differ somewhat from indicators where data from the Bureau of the Census survey of households are used.

SOURCES: U.S. Department of Education, National Center for Education Statistics, *Digest of Education Statistics, [various years]* (based on the HEGIS survey Fall Enrollment in Colleges and Universities); "National Estimates of Higher Education Statistics: 1987," *Early Estimates*, December 1987. U.S. Department of Commerce, Bureau of the Census, "School Enrollments—Social and Economic Characteristics of Students, October [various years]," *Current Population Reports*, Series P-20; and unpublished tabulations.

**Chart 2:17.—Trends in higher education enrollment for women, part-time students, students aged 25 or older, and graduate and professional students: Fall of selected years, 1970–1987**



\* Data for 1970 and 1987 not available.

SOURCES: National Center for Education Statistics, *Digest of Education Statistics, 1988*. Bureau of the Census, *Current Population Reports*, various years

## C. Context: Student Characteristics

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### Indicator 2:18 College enrollment, by selected age groups

- **Between 1980 and 1986, college enrollment increased 9 percent, while the 18- to 24-year-old population decreased 8 percent.**
- **Two factors leading to the enrollment increase were rises in the enrollment rates of 18- to 24-year-olds and of persons aged 25 and older.**

College education in the United States has shown enormous growth in the past 40 years. In part this growth reflects the twentieth century needs of business, industry, and government for a highly skilled and educated work force. Since 1950, enrollment has swelled by over 400 percent, while the number of institutions rose almost 60 percent. Throughout the past decade, however, many analysts and college administrators have expressed concern that the 1980s would be a period of declining enrollment in college education. Some analysts saw in the shrinking population of 18- to 24-year-olds evidence of coming decreases in enrollment.<sup>2</sup>

Contrary to these fears, while the 18- to 24-year-old population declined 7.8 percent between 1980 and 1986, their enrollment actually increased 2.4 percent. Thus a modest increase in their participation rate (from 24.7 percent to 27.4 percent) helped offset the projected decline. If this increase had not occurred, enrollment in 1986 would have been 734,000 below the actual figure of about 7,397,000.<sup>3</sup>

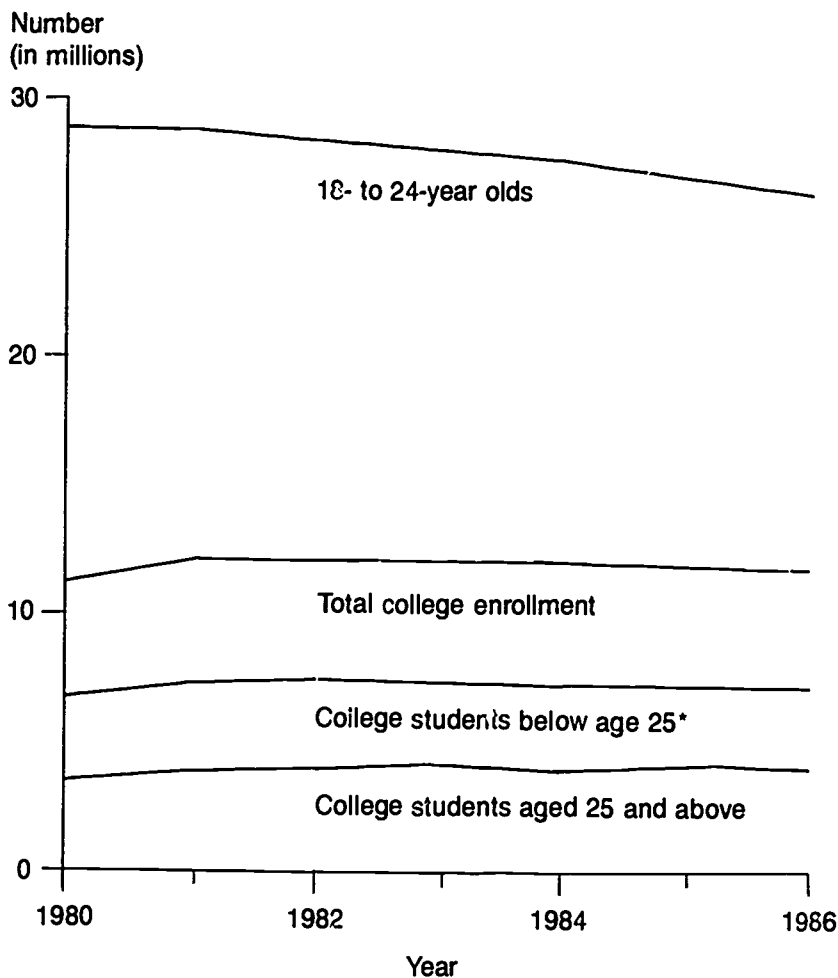
Another factor contributing to the rise in college enrollment in the 1980s was increased numbers of older students. These students enroll for enjoyment, to prepare for career changes, or to upgrade knowledge for current positions. In 1980, 2.9 percent of the population aged 25 years and over were enrolled in higher education. Between 1980 and 1986, the population in this age group increased by 12.3 percent. Had the same percentage of this age group continued to enroll in higher education, the number of students would have grown by approximately 475,000. However, a small rise in the participation rate of this population, from 2.9 to 3.2, brought the enrollment increase to about 878,000. Moreover, this population is growing, so if it maintains a stable participation rate, increasing numbers of students will come from this age group.

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<sup>1</sup> F.E. Crossland, "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: Jossey-Bass, 1980).

<sup>2</sup> Note that the data for this indicator come from a sample survey of households conducted by the Bureau of the Census. Therefore, the data differ somewhat from those used in indicators derived from the NCES HEGIS surveys of the universe of colleges and universities.

**Chart 2:18.—Trends in college enrollment, by age and number of 18- to 24-year-olds: 1980-1986**



\* Below age 25 includes a few students 14 to 17.

SOURCE: Bureau of the Census, *Current Population Reports*, various years.

TEXT SOURCES: U.S. Department of Education, National Center for Education Statistics, *Digest of Education Statistics, 1988*. U.S. Department of Commerce, Bureau of the Census, "School Enrollment—Social and Economic Characteristics of Students, [various years]," *Current Population Reports*, Series P-20; and unpublished tabulations.

## C. Context: Student Characteristics

### Indicator 2:19 Enrollment patterns in higher education, by race and ethnicity

- Among 18- to 24-year-olds, participation rates for blacks and Hispanics in higher education are below those of whites.
- Black and Hispanic participation rates in the mid-1980s were higher than they were in the early 1970s.

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<sup>1</sup> of various populations in higher education. Changes in a participation rate may reflect many different factors, such as changes in the ability to afford higher education or in the quality of secondary schooling. Such changes may also alert higher education institutions to the need for altering policies or offerings.

The proportion of black and Hispanic 18- to 24-year-olds enrolled in higher education increased in the early 1970s but declined in the second half of the decade. By the mid-1980s, the rates for both groups were above those of the early 1970s.

Throughout the period, participation rates of blacks and Hispanics were lower than those of whites. Enrollment of whites between 1970 and 1980 ranged between 25 and 27 percent. In the last 3 years, it has equaled or exceeded 28 percent. Below are the participation rates of 18- to 24-year-olds in higher education.

Year	White	Black	Hispanic <sup>2</sup>
Percent of 18-24-year-olds			
1972	26	18	13
1976	27	23	20
1980	26	19	16
1986	28	22	18

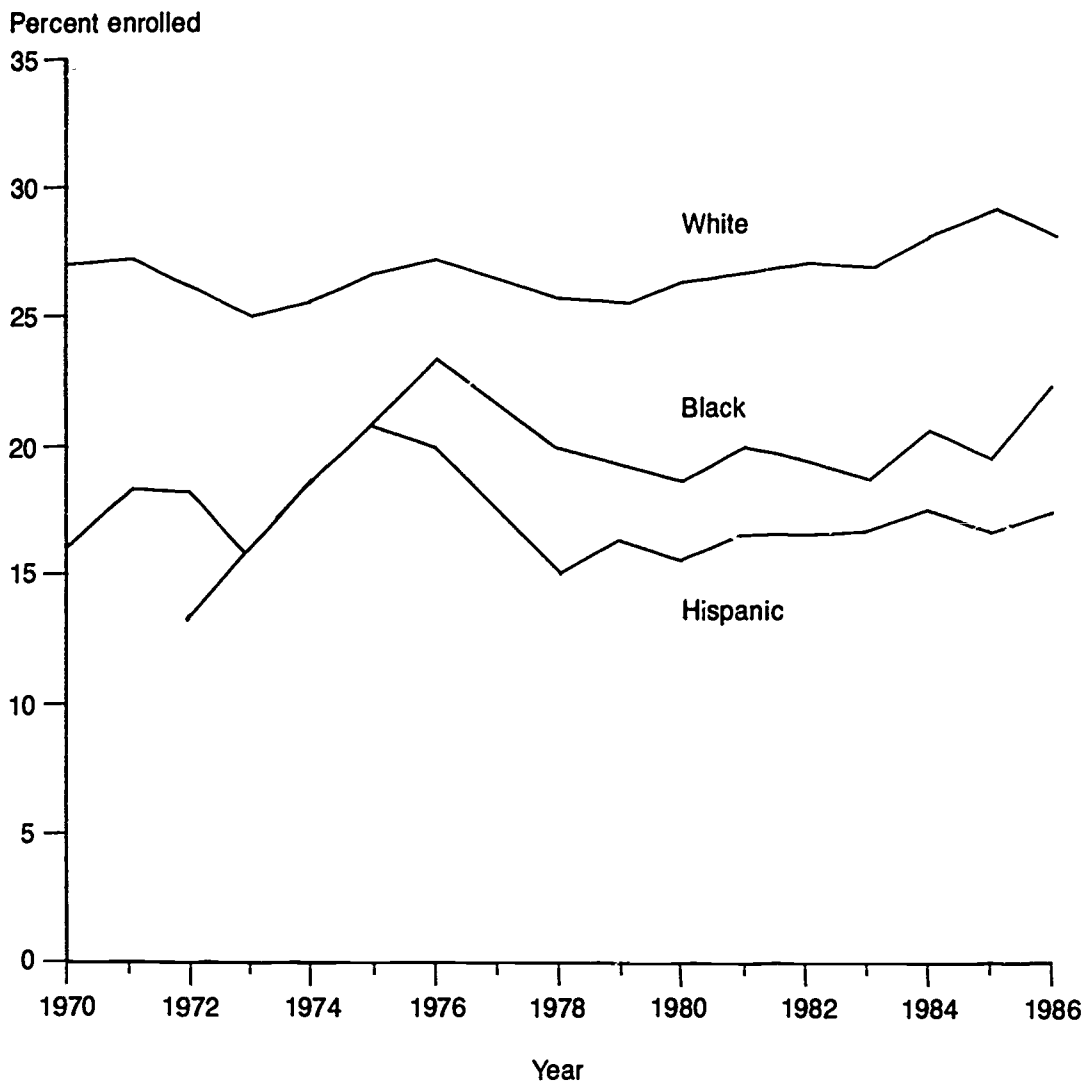
<sup>1</sup> Participation rates represent the proportion of a given subgroup enrolled in an institution of higher education. For example, the participation rate for 18- to 24-year-old blacks is calculated as 18- to 24-year-old black college students as a percent of all black 18- to 24-year-olds.

<sup>2</sup> Hispanics may be of any race.

SOURCE: U. S. Department of Commerce, Bureau of the Census, "School Enrollments—Social and Economic Characteristics of Students, October [various years]," *Current Population Reports*, Series P-20.



**Chart 2:19. — Trends in college participation rates of 18- to 24-year-olds, by race and ethnicity: Fall, 1970-1986**



NOTE: Hispanics may be of any race.

SOURCE: Bureau of the Census, *Current Population Reports*, various years.



## Indicator 2:1

**Table 2:1-1.—Changes in performance on Graduate Record Examinations:  
Long-term and short-term trends**

Test <sup>1</sup>	Change in standard deviation units	
	Long-term (1964–1987)	Short-term (1976–1987)
Mathematics	0.37	0.12
Physics	.13	-.10
Quantitative	.12	.26
Engineering	.01	.23
Chemistry	.01	-.01
Biology	-.01	-.08
Computer science	—	-.07
Economics	-.10	.07
Education	-.18	.13
Psychology	-.21	.04
Music	-.22	.05
Geology <sup>2</sup>	-.31	-.08
Verbal	-.42	-.10
Literature in English	-.67	-.06
History	-.74	-.08
Sociology	-1.04	-.22
Political science	-1.14	-.23

— Not applicable. Tests in this area began in 1976.

<sup>1</sup> Quantitative and Verbal are general examinations while all others are area tests.

<sup>2</sup> Geology area test long-term trend was calculated for the period 1967-87.

NOTE: A change in the range of -0.10 to +0.10 is really no change. Changes exceeding -0.4 or +0.4 are large.

SOURCE: U.S. Department of Education, Office of Research, *The Standardized Test Scores of College Graduates, 1964–1982, 1985*; and special tabulations.

## Indicator 2:2

**Table 2:2-1. — Years of college completed by population 25–34 years old, by race/ethnicity: 1970–1987**

Year (March)	All	White	Black	Hispanic*
Percent who completed 1 or more years				
1970	29.8	31.2	15.0	—
1971	31.3	32.8	16.3	—
1972	33.3	34.8	18.7	—
1973	34.2	35.5	20.4	—
1974	37.4	38.7	23.0	18.7
1975	39.4	40.4	25.9	19.6
1976	41.3	42.7	24.9	20.9
1977	43.6	45.1	28.6	21.9
1978	44.8	46.1	32.6	22.7
1979	45.5	47.0	31.3	23.1
1980	45.8	47.2	33.6	23.6
1981	44.9	45.9	34.1	24.4
1982	45.2	46.2	35.8	23.8
1983	46.2	47.3	33.0	24.7
1984	45.6	47.1	32.8	26.0
1985	45.8	46.8	35.3	25.6
1986	45.7	46.6	36.2	24.9
1987	45.4	46.3	35.0	27.1
Percent who completed 2 or more years				
1970	24.3	25.4	11.7	—
1971	25.2	26.5	12.2	—
1972	27.0	28.2	13.9	—
1973	27.8	29.0	14.6	—
1974	30.7	32.0	16.0	13.8
1975	32.2	33.2	19.4	13.5
1976	33.8	35.0	18.9	14.7
1977	35.9	37.3	21.1	15.3
1978	36.8	38.1	24.1	16.9
1979	37.3	38.7	23.7	17.1
1980	37.6	38.9	24.9	17.8

## Indicator 2:2

**Table 2:2-1. — Years of college completed by population 25–34 years old, by race/ethnicity: 1970–1987—Continued**

Year (March)	All	White	Black	Hispanic*
Percent who completed 2 or more years (cont.)				
1981	36.8	37.8	25.5	17.8
1982	37.4	38.4	27.3	18.7
1983	38.4	39.5	25.3	19.4
1984	37.7	39.1	24.7	19.7
1985	37.8	38.7	28.0	19.5
1986	38.0	38.9	28.5	19.5
1987	37.8	38.7	26.6	21.2
Percent who completed 4 or more years				
1970	15.8	16.6	6.1	—
1971	16.3	17.2	6.3	—
1972	17.9	18.8	7.9	—
1973	18.2	19.0	8.3	—
1974	20.0	21.0	8.1	5.7
1975	21.4	22.2	10.7	7.0
1976	22.6	23.5	11.3	7.4
1977	23.8	25.0	11.4	6.9
1978	23.6	24.8	11.4	8.8
1979	23.8	24.9	12.8	7.8
1980	24.1	25.4	12.4	8.9
1981	23.2	24.3	11.7	8.8
1982	23.8	24.9	12.6	9.7
1983	24.4	25.5	13.6	10.2
1984	24.3	25.5	13.1	10.1
1985	23.8	24.8	13.7	10.5
1986	24.0	25.1	13.6	9.9
1987	23.9	25.1	12.3	9.8

— Not available.

\* Hispanics may be of any race.

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

## Indicator 2:3

**Table 2:3-1.—Number of degrees awarded at institutions of higher education, by level of education: Academic years ending 1971-1986**

Year	Total	Associate degrees	Bachelor's degrees	Master's degrees	Doctor's degrees	First-professional degrees
1971	1,392,902	252,610	839,730	230,509	32,107	37,946
1972	1,507,799	292,119	887,273	251,633	33,363	43,411
1973	1,586,702	316,174	922,362	263,371	34,777	50,018
1974	1,654,365	343,924	945,776	277,033	33,816	53,816
1975	1,665,553	360,171	922,933	292,450	34,083	55,916
1976	1,725,684	391,454	925,746	311,771	34,064	62,649
1977	1,740,681	406,377	919,549	317,164	33,232	64,359
1978	1,743,782	412,246	921,204	311,620	32,131	66,581
1979	1,726,749	402,702	921,390	301,079	32,730	68,848
1980	1,731,154	400,910	929,417	298,081	32,615	70,131
1981	1,752,170	416,377	935,140	295,739	32,958	71,956
1982	1,787,798	434,515	952,998	295,546	32,707	72,032
1983	1,821,783	456,441	969,510	289,921	32,775	73,136
1984	1,818,604	452,416	974,309	284,263	33,209	74,407
1985	1,828,446	454,712	979,477	286,251	32,943	75,063
1986	1,830,000	446,047	987,823	288,567	33,653	73,910

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Digest of Education Statistics, 1988* (based on the HEGIS survey Degrees and Other Formal Awards Conferred, various years).

## Indicator 2:3

**Table 2:3-2. — Percentage distribution of degrees awarded at institutions of higher education, by level of education: Academic years ending 1971–1986**

Year	Total	Associate degrees	Bachelor's degrees	Master's degrees	Doctor's degrees	First-professional degrees
1971	100.0	18.1	60.3	16.5	2.3	2.7
1972	100.0	18.1	58.8	16.7	2.2	2.9
1973	100.0	19.9	58.1	16.6	2.2	3.2
1974	100.0	20.8	57.2	16.7	2.0	3.3
1975	100.0	21.6	55.4	17.6	2.0	3.4
1976	100.0	22.7	53.6	18.1	2.0	3.6
1977	100.0	23.3	52.8	18.2	1.8	3.7
1978	100.0	23.6	52.8	17.9	1.9	3.8
1979	100.0	23.3	53.4	17.4	1.9	4.0
1980	100.0	23.2	53.7	17.2	1.9	4.1
1981	100.0	23.8	53.4	16.9	1.9	4.1
1982	100.0	24.3	53.3	16.5	1.8	4.0
1983	100.0	25.1	53.2	15.9	1.8	4.0
1984	100.0	24.9	53.6	15.6	1.8	4.1
1985	100.0	24.9	53.6	15.7	1.8	4.1
1986	100.0	24.4	54.0	15.8	1.8	4.0

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Digest of Education Statistics, 1988* (based on the HEGIS survey Degrees and Other Formal Awards Conferred, various years).

## Indicator 2:4

**Table 2:4-1. — Bachelor's degrees conferred, by field: Academic years ending 1971–1986**

Field	1971	1972	1973	1974
Total	839,730	887,273	922,362	945,776
Arts and sciences	418,583	432,039	442,873	449,235
Sciences	275,072	282,881	289,613	293,272
Physical and biological sciences	81,956	81,751	85,996	91,153
Social sciences	193,116	201,130	203,617	202,119
Humanities	143,511	149,158	153,260	155,963
Technical/professional	421,147	455,234	479,489	496,541
Business	114,865	121,360	126,263	131,766
Education	176,614	191,220	194,229	185,225
Other technical/professional	129,668	142,654	158,997	179,550
Computer and information sciences	2,388	3,402	4,304	4,756
Engineering and engineering technologies	50,046	51,164	51,265	50,286
Other	77,234	88,088	103,428	124,508

Field	1975	1976	1977	1978
Total	922,933	925,746	919,549	921,204
Arts and sciences	429,342	418,534	400,765	387,610
Sciences	276,853	267,919	254,550	244,443
Physical and biological sciences	90,700	91,724	90,298	87,057
Social sciences	186,153	176,195	164,252	157,386
Humanities	152,489	150,615	146,215	143,167
Technical/professiona.	493,591	507,212	518,784	533,594
Business	133,010	142,379	150,964	160,187
Education	167,015	154,807	143,722	136,141
Other technical/professional	193,566	210,026	224,098	237,266
Computer and information sciences	5,033	5,652	6,407	7,201
Engineering and engineering technologies	46,852	46,331	49,283	55,654
Other	141,681	158,043	168,408	174,411



## Indicator 2:4

**Table 2:4-1.—Bachelor's degrees conferred, by field: Academic years ending 1971–1986—Continued**

Field	1979	1980	1981	1982
Total	921,390	929,417	935,140	952,998
Arts and sciences	372,191	362,750	353,425	353,428
Sciences	234,242	226,639	219,424	217,866
Physical and biological sciences	83,859	81,158	78,246	77,290
Social sciences	150,383	145,481	141,178	140,576
Humanities	137,949	136,111	134,001	135,562
Technical and professional	549,199	566,667	581,715	599,570
Business	171,764	185,361	199,338	214,001
Education	126,109	118,169	108,309	101,113
Other technical and professional	251,326	263,137	274,068	284,456
Computer and information sciences	8,719	11,154	15,121	20,267
Engineering and engineering technologies	62,375	68,893	75,000	80,005
Other	180,232	183,090	183,947	184,184

## Indicator 2:4

**Table 2:4-1. — Bachelor's degrees conferred, by field: Academic years ending 1971-1986 — Continued**

Field	1983	1984	1985	1986
Total	969,510	974,309	979,477	987,823
Arts and sciences	344,502	342,434	340,800	343,119
Sciences	211,292	208,606	208,595	210,785
Physical and biological sciences	75,840	75,522	77,323	76,561
Social sciences	135,452	133,084	131,272	134,224
Humanities	133,210	133,828	132,205	132,334
Technical and professional	625,008	631,875	638,077	644,704
Business	226,893	230,031	233,000	238,160
Education	97,991	92,382	88,161	87,221
Other technical and professional	300,124	309,462	317,165	319,323
Computer and information sciences	24,510	32,172	38,878	41,889
Engineering and engineering technologies	89,270	94,444	96,105	95,953
Other	186,344	182,846	182,182	181,481

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.

SOURCE: U. S. Department of Education, National Center for Education Statistics, *Digest of Education Statistics, 1988* (based the HEGIS survey Degrees and Other Formal Awards Conferred, various years).

## Indicator 2:5

**Table 2:5-1.—Master's degrees conferred by institutions of higher education, by field: Academic years ending 1971–1986**

Field	1971	1972	1973	1974	1975	1976
Total	230,509	251,633	263,371	277,033	292,450	311,771
Arts and sciences	67,545	70,803	70,613	72,513	72,243	70,788
Sciences	38,193	40,291	40,667	41,285	40,642	39,540
Physical and biological sciences	17,286	17,586	17,548	17,448	16,684	15,907
Social sciences	20,907	22,705	23,119	23,837	23,958	23,633
Humanities	29,352	30,512	29,946	31,228	31,601	31,248
Technical/professional	162,964	180,830	192,758	204,520	220,207	240,983
Business	26,481	30,367	31,007	32,644	36,247	42,512
Education	88,952	98,143	105,535	112,610	120,169	128,417
Other technical/professional	47,531	52,320	56,186	59,266	63,791	70,054
Computer and information sciences	1,588	1,977	2,113	2,276	2,299	2,603
Engineering and engineering technologies	16,443	16,960	16,619	15,379	15,348	16,312
Other	29,500	33,383	37,454	41,611	46,144	51,109

Field	1977	1978	1979	1980	1981	1982
Total	317,164	311,620	301,079	298,081	295,739	295,546
Arts and sciences	70,795	68,592	64,507	63,177	61,702	61,976
Sciences	39,836	38,478	36,128	34,496	33,682	33,798
Physical and biological sciences	16,140	15,740	15,318	14,589	13,829	14,115
Social sciences	23,696	22,738	20,810	19,907	19,853	19,683
Humanities	30,959	30,114	28,379	28,681	28,020	28,178
Technical/professional	246,369	243,028	236,572	234,904	234,037	233,570
Business	46,420	48,326	50,372	55,006	57,898	61,299
Education	126,825	119,038	111,995	103,951	98,938	93,757
Other technical/professional	73,124	75,664	74,205	75,947	77,201	78,514
Computer and information sciences	2,798	3,038	3,055	3,647	4,218	4,935
Engineering and engineering technologies	16,245	16,398	15,495	16,243	16,709	17,939
Other	54,081	56,228	55,655	56,057	56,274	55,640

## Indicator 2:5

**Table 2:5-1—Masters' degrees conferred by institutions of higher education, by field: Academic years ending 1971–1986—Continued**

Field	1983	1984	1985	1986
Total	289,921	284,263	286,251	288,567
Arts and sciences	60,099	59,769	59,659	60,038
Sciences	33,313	32,190	32,525	32,795
Physical and biological sciences	13,823	13,723	13,737	14,074
Social sciences	19,490	18,467	18,788	18,721
Humanities	26,786	27,579	27,134	27,243
Technical/professional	229,822	224,494	226,592	228,529
Business	65,319	66,653	67,527	67,137
Education	84,853	77,187	76,137	76,353
Other technical/professional	79,650	80,654	82,928	85,039
Computer and information sciences	5,321	6,190	7,101	8,070
Engineering and engineering technologies	19,350	20,661	21,557	21,661
Other	54,979	53,803	54,270	55,308

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

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Digest of Education Statistics, 1988* (based on the HEGIS survey Degrees and Other Formal Awards Conferred, various years).

## Indicator 2:5

**Table 2:5-2.—Doctor's degrees conferred by institutions of higher education, by field: Academic years ending 1971-1986**

Field	1971	1972	1973	1974	1975	1976
Total	32,107	33,363	34,777	33,816	34,083	34,064
Arts and sciences	19,035	19,586	20,414	19,825	19,944	19,830
Sciences	14,675	14,843	15,029	14,555	14,636	14,414
Physical and biological sciences	9,234	8,884	8,710	8,096	7,985	7,679
Social sciences	5,441	5,959	6,319	6,459	6,651	6,735
Humanities	4,360	4,743	5,385	5,270	5,368	5,416
Technical/professional	13,072	13,777	14,363	13,991	14,139	14,234
Business	807	896	923	981	1,009	953
Education	6,403	7,044	7,318	7,293	7,446	7,778
Other technical/professional	5,862	5,837	6,122	5,717	5,684	5,503
Computer and information sciences	128	167	196	198	213	244
Engineering and engineering technologies	3,638	3,671	3,492	3,312	3,108	2,821
Other	2,096	1,999	2,434	2,207	2,363	2,438

Field	1977	1978	1979	1980	1981	1982
Total	33,232	32,131	32,730	32,615	32,958	32,707
Arts and sciences	19,293	18,440	18,730	18,385	18,405	18,217
Sciences	14,106	13,417	13,394	13,436	13,656	13,551
Physical and biological sciences	7,561	7,374	7,274	7,449	7,587	7,710
Social sciences	6,545	6,170	6,020	5,987	6,069	5,841
Humanities	5,187	5,023	5,336	4,949	4,749	4,666
Technical/professional	13,939	13,691	14,000	14,230	14,553	14,490
Business	863	866	880	792	842	855
Education	7,963	7,595	7,736	7,941	7,900	7,680
Other technical/professional	5,113	5,230	5,404	5,497	5,811	5,955
Computer and information sciences	216	196	236	240	252	251
Engineering and engineering technologies	2,586	2,440	2,506	2,507	2,561	2,636
Other	2,311	2,594	2,662	2,750	2,998	3,068

## Indicator 2:5

**Table 2:5.2—Doctor's degrees conferred by institutions of higher education, by field: Academic years ending 1971–1986—Continued**

Field	1983	1984	1985	1986
Total	32,775	33,209	32,943	33,653
Arts and sciences	17,910	17,936	17,745	18,253
Sciences	13,347	13,322	13,293	13,694
Physical and biological sciences	7,308	7,438	7,534	7,651
Social sciences	6,039	5,884	5,759	6,043
Humanities	4,563	4,614	4,452	4,559
Technical/professional	14,865	15,273	15,198	15,400
Business	809	977	866	969
Education	7,551	7,473	7,151	7,110
Other technical/professional	6,505	6,823	7,181	7,321
Computer and information sciences	262	251	248	344
Engineering and engineering technologies	2,831	2,981	3,230	3,410
Other	3,412	3,591	3,703	3,567

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

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Digest of Education Statistics, 1988* (based on the HEGIS survey Degrees and Other Formal Awards Conferred, various years).

## Indicator 2:6

**Table 2:6-1.—Activities of recent bachelor's degree recipients 1 year after graduation, by field of study and year of graduation: Academic years ending 1980 and 1984**

Major field of study	Total		Employed full-time <sup>1</sup>		Military		Enrolled in school	
	1980	1984	1980	1984	1980	1984	1980	1984
	Percentage distribution							
Total	100	100	71	71	—	2	13	13
Technical/professional	100	100	80	78	—	2	7	7
Arts and sciences	100	100	56	55	—	2	24	25
Other	100	100	74	75	—	2	10	9
Technical/professional								
Engineering	100	100	84	79	—	6	8	10
Business and management	100	100	83	83	—	2	7	4
Health	100	100	77	73	—	1	6	9
Education	100	100	76	73	—	1	7	7
Public affairs/social services	100	100	77	71	—	4	10	9
Arts and sciences								
Biological sciences	100	100	46	45	—	(2)	35	38
Physical sciences/mathematics	100	100	59	45	—	7	30	36
Psychology	100	100	56	56	—	(2)	27	23
Social sciences	100	100	61	59	—	3	22	24
Humanities	100	100	56	58	—	1	17	19
Other								
Communications	100	100	71	76	—	1	6	6
Miscellaneous	100	100	75	75	—	2	11	10

## Indicator 2:6

**Table 2:6-1.—Activities of recent bachelor's degree recipients 1 year after graduation, by field of study and year of graduation: Academic years ending 1980 and 1984—Continued**

Major field of study	Unemployed		Not in labor force		Other	
	1980	1984	1980	1984	1980	1984
	Percentage distribution					
Total	6	3	3	5	7	7
Technical/professional	4	3	3	4	6	6
Arts and sciences	8	3	4	6	8	9
Other	5	4	4	5	7	5
Technical/professional						
Engineering	4	2	4	2	(2)	2
Business and management	4	3	2	4	4	3
Health	4	2	2	3	12	12
Education	4	2	3	4	9	13
Public affairs/social services	1	5	5	3	6	8
Arts and sciences						
Biological sciences	7	2	4	7	9	7
Physical sciences/mathematics	7	2	2	6	3	5
Psychology	7	4	2	7	7	10
Social sciences	7	3	4	4	6	7
Humanities	12	4	5	6	11	12
Other						
Communications	3	5	7	4	13	8
Miscellaneous	6	3	3	5	5	5

— Not applicable; data included with full-time employed.

<sup>1</sup> Military included in 1980.

<sup>2</sup> Less than 0.5 percent

NOTE: Respondents were identified for their primary activity in the order listed. Those in "enrolled in school," for example, were enrolled but not working full time or serving in the military.

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



## Indicator 2:7

**Table 2:7-1.—Research and development (R&D) expenditures at doctorate-granting institutions, by source of funds: Fiscal years 1972–1986**

Year	R&D expenditures at doctorate-granting institutions <sup>1</sup>			Total national R&D expenditures as a percent of gross national product (GNP)	Source of funds at doctorate-granting institutions (percentage distribution)					
	Current dollars (in thousands)	Constant 1982 dollars <sup>2</sup> (in thousands)	As a percent of total national R&D expenditures		Federal government	State/Local government	Industry	Institutional funds	Other	
1972	\$2,568,573	\$5,523,813	9.1	2.3	100.0	68.3	10.2	2.8	11.6	7.1
1973	2,809,160	5,675,071	9.1	2.3	100.0	69.0	10.0	2.9	11.1	7.0
1974	2,953,658	5,469,737	9.1	2.2	100.0	67.4	10.0	3.2	12.3	7.2
1975	3,338,409	5,629,695	9.4	2.2	100.0	67.1	9.7	3.3	12.3	7.6
1976	3,656,888	5,795,385	9.5	2.2	100.0	67.4	9.7	3.3	11.9	7.6
1977	3,987,885	5,925,535	9.3	2.1	100.0	67.1	9.2	3.4	12.6	7.7
1978	4,540,256	6,288,443	9.4	2.1	100.0	66.2	8.9	3.7	13.4	7.8
1979	5,271,643	6,706,925	9.7	2.2	100.0	67.0	8.8	3.6	13.6	7.0
1980	5,958,817	6,953,170	9.6	2.3	100.0	67.6	8.1	3.9	13.7	6.7
1981	6,695,996	7,123,400	9.3	2.4	100.0	66.9	8.0	4.3	14.3	6.5
1982	7,147,577	7,147,677	9.0	2.5	100.0	65.4	8.3	4.6	14.9	6.8
1983	7,675,992	7,387,865	8.8	2.6	100.0	63.5	8.0	4.8	16.1	7.5
1984	8,367,143	7,768,935	8.6	2.6	100.0	63.2	8.0	5.4	16.0	7.4
1985	9,381,822	8,436,890	8.8	2.7	100.0	62.9	7.7	5.7	16.4	7.3
1986 <sup>3</sup>	10,570,638	9,264,363	9.1	2.8	100.0	61.8	8.4	6.2	16.6	6.9

<sup>1</sup> R&D expenditures include separately budgeted expenditures for basic research and for applied research and development. They do not include expenditures by university-administered federally funded research and development centers (FFRDC's). R&D expenditures at doctorate-granting institutions made up 98.6 percent of total academic R&D expenditures in 1986.

<sup>2</sup> Based on GNP implicit price deflator; base year = 1982.

<sup>3</sup> Estimated.

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

SOURCE: National Science Board, *Science Indicators: The 1985 Report*, 1985; National Science Foundation, *Early Release of Summary Statistics on Academic Science/ Engineering Resources*, October 1987. (Based on Scientific and Engineering Expenditures at Universities and Colleges survey, various years.)

## Indicator 2:8

**Table 2:8-1. —Median earnings and earnings ratios of year-round, full-time workers 25-34 years old, by educational attainment and by race and sex: 1978-1987**

Year (March)	Median earnings: 4 years of high school	Earnings ratios*		Median earnings: 4 years of high school	Earnings ratios	
		1-3 years college to 4 years high school	4 or more years college to 4 years high school		1-3 years college to 4 years high school	4 or more years college to 4 years high school
		White			Black	
1978	\$11,825	1.07	1.20	\$9,330	1.12	1.38
1979	12,351	1.09	1.24	10,410	1.15	1.27
1980	13,357	1.13	1.24	10,950	1.14	1.35
1981	14,563	1.09	1.24	12,001	1.08	1.2 <sup>a</sup>
1982	15,308	1.10	1.33	13,106	1.06	1.2
1983	15,754	1.14	1.32	13,083	1.12	1.34
1984	16,356	1.15	1.32	13,229	1.19	1.38
1985	17,597	1.14	1.30	13,337	1.14	1.50
1986	17,708	1.18	1.43	14,276	1.09	1.46
1987	18,238	1.16	1.41	14,357	1.12	1.49
		Men			Women	
1978	13,472	1.06	1.17	8,662	1.12	1.29
1979	15,048	1.02	1.12	9,195	1.09	1.29
1980	15,860	1.04	1.16	9,914	1.13	1.33
1981	16,752	1.05	1.21	11,001	1.12	1.35
1982	17,664	1.09	1.27	11,755	1.13	1.39
1983	18,137	1.12	1.28	12,475	1.16	1.37
1984	18,815	1.12	1.32	12,867	1.19	1.37
1985	20,399	1.10	1.26	13,571	1.15	1.43
1986	20,092	1.14	1.35	14,246	1.15	1.47
1987	20,540	1.14	1.35	14,424	1.17	1.52

\*The earnings ratio is the earnings of those completing 1-3 or 4 or more years of college divided by the earnings of those completing only 4 years of high school.

SOURCE: U.S. Department of Commerce, Bureau of the Census, Current Population Survey, March of various years, unpublished tabulations.

## Indicator 2:9

**Table 2:9-1. — Total degrees and percent earned by foreign students, by field of study and degree level: Selected academic years ending 1977–1985**

Degree level and field of study	1977		1979		1981		1985	
	Total degrees	Percent earned by foreign students <sup>1</sup>	Total degrees	Percent earned by foreign students <sup>1</sup>	Total degrees	Percent earned by foreign students <sup>1</sup>	Total degrees	Percent earned by foreign students <sup>1</sup>
Bachelor's degrees								
All fields	915,131	1.7	916,347	1.9	934,800	2.4	962,311	3.0
Natural sciences and engineering <sup>2</sup>	144,707	4.0	153,514	4.6	168,318	5.8	209,704	5.7
Life and physical sciences and mathematics	89,789	2.1	83,395	2.3	78,244	2.7	76,555	3.2
Computer and information sciences	6,370	4.2	8,693	4.3	15,120	5.1	38,589	5.5
Engineering <sup>3</sup>	48,548	7.4	61,426	7.7	74,954	9.3	94,560	7.8
Other fields	770,424	1.3	762,833	1.4	766,482	1.7	758,607	2.3
Master's degrees								
All fields	315,660	5.5	299,887	6.5	294,183	7.5	280,421	9.6
Natural sciences and engineering <sup>2</sup>	34,684	15.6	33,489	18.1	34,271	20.7	41,193	23.7
Life and physical sciences and mathematics	16,091	9.3	15,270	10.8	13,770	11.8	13,516	16.7
Computer and information sciences	2,724	13.4	2,980	15.6	4,143	21.8	6,942	24.6
Engineering <sup>3</sup>	15,869	22.3	15,239	25.9	16,358	27.9	20,735	28.0
Other fields	280,976	4.2	266,398	5.0	259,912	5.8	239,228	7.2

## Indicator 2:9

**Table 2:9-1. Total degrees and percent earned by foreign students, by field of study and degree level: Selected academic years ending 1977-1985--Continued**

Degree level and field of study	1977		1979		1981		1985	
	Total degrees	Percent earned by foreign students <sup>1</sup>	Total degrees	Percent earned by foreign students <sup>1</sup>	Total degrees	Percent earned by foreign students <sup>1</sup>	Total degrees	Percent earned by foreign students <sup>1</sup>
	Doctor's degrees							
All fields	33,111	11.3	32,664	12.0	32,839	12.8	32,307	16.5
Natural sciences and engineering <sup>2</sup>	10,349	18.6	10,101	18.9	10,389	19.3	10,836	25.6
Life and physical sciences and mathematics	7,559	13.7	7,374	13.5	7,586	13.1	7,422	17.6
Computer and information sciences	216	20.8	236	20.3	252	20.6	240	29.2
Engineering <sup>3</sup>	2,574	32.9	2,491	34.8	2,551	37.5	3,174	44.0
Other fields	22,762	8.0	22,563	8.9	22,450	9.8	21,471	11.8

<sup>1</sup> Nonresident aliens, i.e., non-United States citizens on temporary visas.

<sup>2</sup> Life and physical sciences, mathematics, computer and information sciences, and engineering.

<sup>3</sup> Includes engineering technologies.

NOTE: The total number of degrees reported in this table for each degree level and field of study is lower, but by no more than 2 percent, than the total actually conferred. This is because racial/ethnic/ citizenship status data were not imputed for some of the institutions that did not report such data.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Digest of Education Statistics*, 1980, 1982, 1987, and 1988 editions. (Based on: U.S. Department of Education, Office of Civil Rights, *Data on Earned Degrees Conferred by Institutions of Higher Education, by Race, Ethnicity and Sex, Academic Years 1976-77 and 1978-79*; and National Center for Education Statistics, the HEGIS survey Degrees and Other Formal Awards Conferred 1960-81 and 1984-85.)

## Indicator 2:9

**Table 2:9-2.—Postgraduation plans of foreign doctorate recipients with temporary U.S. visas, by major field: Academic years ending 1976–1986**

Year of doctorate	Number of recipients <sup>1</sup>	Percent of recipients			
		With definite plans	With definite plans in the United States		
			Total <sup>2</sup>	Employment plans	Post-doctoral study plans
Natural sciences and engineering <sup>3</sup>					
1976	2,080	61.3	26.4	10.4	15.8
1977	2,024	60.9	28.0	11.8	15.9
1978	1,973	63.8	31.5	12.4	19.1
1979	2,044	67.7	33.0	14.7	18.1
1980	2,131	67.5	34.2	15.8	18.1
1981	2,308	64.8	33.2	18.2	14.8
1982	2,471	65.1	32.7	17.9	14.6
1983	2,725	64.4	31.0	16.0	15.0
1984	2,935	61.5	33.3	15.6	17.6
1985	3,264	62.2	33.2	15.3	17.7
1986	3,338	64.7	37.1	15.5	21.5
All other fields					
1976	1,449	66.5	12.7	10.5	2.1
1977	1,424	66.1	12.2	10.3	1.5
1978	1,448	69.5	14.4	12.6	1.7
1979	1,543	67.3	13.1	11.0	1.9
1980	1,512	66.7	11.8	8.9	2.8
1981	1,632	68.3	13.8	10.8	2.8
1982	1,733	65.6	12.0	9.6	2.4
1983	1,774	63.7	13.0	10.8	2.3
1984	1,892	61.9	12.7	10.1	2.5
1985	1,965	63.9	15.7	13.1	2.5
1986	1,929	65.3	18.4	15.0	3.2

<sup>1</sup> Due to differences in survey design, the total number of doctorates received by non-U.S. citizens with temporary visas obtained by the National Science Foundation's survey is smaller than that obtained by the U.S. Department of Education's survey (see table 2:9-1). The Department's survey refers to these doctorate recipients as nonresident aliens.

<sup>2</sup> Includes a small proportion (less than 1 percent) whose plans are unknown.

<sup>3</sup> Physical and life sciences, mathematics, computer and information sciences, and engineering.

SOURCE: National Science Foundation, Survey of Earned Doctorates, various years, unpublished tabulations.

## Indicator 2:10

**Table 2:10-1.—Degrees earned, by race/ethnicity and degree level: Selected academic years ending 1977–1985**

Race/ethnicity	1977	1979	1981	1985
<b>Bachelor's degrees</b>				
Total	915,131	916,347	934,800	968,311
White, non-Hispanic	805,186	799,617	807,319	826,106
Black, non-Hispanic	58,515	60,130	60,673	57,473
Hispanic	18,663	20,029	21,832	25,874
Asian or Pacific Islander	13,745	15,336	18,794	25,395
American Indian/Alaskan Native	3,319	3,404	3,593	4,246
Nonresident alien	15,703	17,831	22,589	29,217
<b>Master's degrees</b>				
Total	315,660	299,887	294,183	280,421
White, non-Hispanic	265,147	249,051	241,216	223,628
Black, non-Hispanic	21,024	19,393	17,133	13,939
Hispanic	6,069	5,544	6,461	6,864
Asian or Pacific Islander	5,115	5,495	6,282	7,782
American Indian/Alaskan Native	967	999	1,034	1,256
Nonresident alien	17,338	19,405	22,057	26,952
<b>Doctor's degrees</b>				
Total	33,111	32,664	32,839	32,307
White, non-Hispanic	26,836	26,128	25,908	23,934
Black, non-Hispanic	1,253	1,267	1,265	1,154
Hispanic	522	439	456	677
Asian or Pacific Islander	658	811	877	1,106
American Indian/Alaskan Native	95	104	130	119
Nonresident alien	3,747	3,915	4,203	5,317
<b>First-professional degrees</b>				
Total	63,953	68,611	71,340	71,957
White, non-Hispanic	58,422	62,430	64,551	63,219
Black, non-Hispanic	2,537	2,836	2,931	3,029
Hispanic	1,076	1,283	1,541	1,884
Asian or Pacific Islander	1,021	1,205	1,456	1,816
American Indian/Alaskan Native	196	216	192	248
Nonresident alien	701	641	669	861

NOTE: Data for academic year ending 1983 were not fully edited and thus are not available for publication. The total number of degrees reported in this table is lower than the total actually conferred (6 percent lower for first-professional degrees and 2 percent or less lower for other degree types). This is because racial/ethnic data were not imputed for some of the institutions that did not report such data.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Digest of Education Statistics*, 1980, 1982, 1987, and 1988 editions (based on the HEGIS survey Earned Degrees Conferred, various years).

## Indicator 2:10

**Table 2:10-2. — Associate degrees earned, by race/ethnicity: Academic year ending 1985**

Race/ethnicity	Number of degrees
Total	429,823
White, non-Hispanic	355,343
Black, non-Hispanic	35,799
Hispanic	19,407
American Indian/Alaskan Native	2,953
Asian or Pacific Islander	9,914
Nonresident alien	6,407

NOTE: The total number of associate degrees reported here is 6 percent lower than the total number actually conferred. This is because racial/ethnic data were not imputed for some of the institutions not reporting such data.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Digest of Education Statistics, 1988* (based on the HEGIS survey Earned Degrees Conferred, various years).

## Indicator 2:10

**Table 2:10-3.—Degrees earned by black, non-Hispanic men and women, by level of degree: Selected academic years ending 1977–1985**

Sex and degree level	1977	1979	1981	1985
<b>Men</b>				
Bachelor's	25,026	24,544	24,511	23,018
Master's	7,769	7,045	6,158	5,200
Doctor's	766	733	694	561
First-professional	1,761	1,783	1,772	1,623
<b>Women</b>				
Bachelor's	33,489	35,586	36,162	34,455
Master's	13,255	12,348	10,975	8,739
Doctor's	487	534	571	593
First-professional	776	1,053	1,159	1,406

NOTE: Data for academic year ending 1983 were not fully edited and thus are not available for publication.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Digest of Education Statistics*, 1980, 1982, 1987, and 1988 editions (based on the HEGIS survey Earned Degrees Conferred, various years).



## Indicator 2:11

**Table 2:11-1.—Percentage distribution of field of study, by degree level and race/ethnicity: Academic years ending 1977 and 1985**

Degree level and field of study	1977						
	Total	White (non-Hispanic)	Black (non-Hispanic)	Hispanic	American Indian/Alaskan Native	Asian or Pacific Islander	Non-resident alien
<b>Bachelor's degrees</b>							
Number	915,131	805,186	58,515	18,663	3,319	13,745	15,703
Total percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Arts and sciences	43.6	43.7	40.8	49.8	42.0	46.8	36.8
Sciences	27.7	27.5	29.6	30.9	26.8	32.3	25.2
Physical and biological sciences	9.8	10.0	6.5	8.2	7.5	14.5	12.2
Social sciences	17.9	17.5	23.1	22.6	19.3	17.8	13.1
Humanities	15.8	16.2	11.2	19.0	15.2	14.5	11.5
Professional/technical	56.4	56.3	59.2	50.2	58.0	53.2	63.2
Business and management	16.6	16.5	17.0	13.9	13.0	18.9	21.1
Education	15.7	15.5	22.1	16.3	21.3	6.5	4.7
Computer and information sciences	0.7	0.7	0.6	0.5	0.5	1.2	1.7
Engineering	5.3	5.1	2.3	4.8	4.0	8.7	22.7
Other professional/technical	18.2	18.5	17.1	14.7	19.2	17.9	13.0
<b>Advanced degrees*</b>							
Number	348,771	291,983	22,277	6,591	1,062	5,773	21,085
Total percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Arts and sciences	25.8	26.1	15.4	27.7	21.8	28.4	30.7
Sciences	15.5	15.3	10.0	15.5	14.1	18.7	22.4
Physical and biological sciences	6.8	6.7	2.4	3.9	6.8	10.6	12.0
Social sciences	8.7	8.6	7.6	11.6	7.3	8.1	10.3
Humanities	10.3	10.8	5.4	12.2	7.6	9.7	8.3
Professional/technical	74.2	73.9	84.6	72.3	78.2	71.6	69.3
Business and management	13.5	13.6	7.3	8.8	10.3	16.5	18.7
Education	38.5	39.0	60.1	43.0	48.6	18.5	13.1
Computer and information sciences	0.8	0.8	0.3	0.7	0.4	2.0	1.9
Engineering	5.3	4.3	1.2	4.1	2.4	14.9	20.8
Other professional/technical	16.1	16.2	15.7	15.7	16.7	19.7	14.7

## Indicator 2:11

**Table 2:11-1. — Percentage distribution of field of study, by degree level and race/ethnicity: Academic years ending 1977 and 1985—Continued**

Degree level and field of study	1977						
	Total	White (non-Hispanic)	Black (non-Hispanic)	Hispanic	American Indian/Alaskan Native	Asian or Pacific Islander	Non-resident alien
Master's degrees							
Number	315,660	265,147	21,024	6,069	967	5,115	17,338
Total percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Arts and sciences	22.4	22.7	14.1	25.3	18.6	24.9	26.4
Sciences	12.6	12.5	9.1	13.5	11.4	14.9	18.2
Physical and biological sciences	5.1	5.1	2.1	2.8	5.0	7.7	8.7
Social sciences	7.5	7.4	7.0	10.7	6.4	7.2	9.5
Humanities	9.8	10.2	5.0	11.8	7.2	10.0	8.2
Professional/technical	77.6	77.3	85.9	74.7	81.4	75.1	73.6
Business and management	14.6	14.8	7.7	9.4	11.0	18.3	21.8
Education	40.0	40.4	60.4	43.9	50.1	19.4	13.8
Computer and information sciences	0.9	0.8	0.3	0.8	0.3	2.1	2.1
Engineering	5.0	4.2	1.1	4.0	2.4	14.3	20.4
Other professional/technical	17.1	17.2	16.3	16.5	17.7	21.0	15.5
Doctor's degrees							
Number	33,111	26,836	1,253	522	95	658	3,747
Total percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Arts and sciences	58.0	60.1	37.0	55.7	53.7	55.8	50.5
Sciences	42.6	43.4	26.3	38.9	42.1	48.5	41.8
Physical and biological sciences	22.8	22.7	8.5	16.5	25.3	33.6	27.6
Social sciences	19.8	20.7	17.7	22.4	16.8	14.9	14.2
Humanities	15.4	16.7	10.8	16.9	11.6	7.3	8.7
Professional/technical	42.0	39.9	63.0	44.3	46.3	44.2	49.5
Business and management	2.6	2.5	1.0	1.3	3.2	2.4	4.3
Education	24.0	24.7	54.7	31.4	33.7	11.7	10.2
Computer and information sciences	0.7	0.6	0.1	.0	1.1	1.4	1.2
Engineering	7.8	5.8	1.8	4.8	2.1	18.8	22.6
Other professional/technical	7.0	6.4	5.3	6.7	6.3	9.9	11.3

## Indicator 2:11

**Table 2:11-1. — Percentage distribution of field of study, by degree level and race/ethnicity: Academic years ending 1977 and 1985—Continued**

Degree level and field of study	1985						
	Total	White (non-Hispanic)	Black (non-Hispanic)	Hispanic	American Indian/Alaskan Native	Asian or Pacific Islander	Non-resident alien
Bachelor's degrees							
Number	968,311	826,106	57,473	25,874	4,246	25,395	29,217
Total percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Arts and sciences	34.7	35.0	32.9	38.5	37.2	36.3	27.0
Sciences	21.4	21.3	21.6	23.5	22.8	25.4	18.0
Physical and biological sciences	7.9	7.8	6.3	7.4	7.5	14.1	8.4
Social sciences	13.5	13.4	15.3	16.1	15.3	11.3	9.6
Humanities	13.4	13.7	11.3	15.0	14.4	10.8	9.1
Professional/technical	65.3	65.0	67.1	31.5	62.8	63.7	73.0
Business and management	23.9	23.8	26.1	22.3	21.7	20.8	25.4
Education	9.1	9.4	9.5	9.8	11.4	3.0	3.5
Computer and information sciences	4.0	3.8	3.7	3.2	3.3	8.0	7.2
Engineering	9.8	9.3	5.5	8.7	7.4	19.7	25.4
Other professional/technical	18.6	18.8	22.3	17.5	19.1	12.1	11.5
Advanced degrees*							
Number	312,728	247,562	15,093	7,541	1,375	8,888	32,269
Total percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Arts and sciences	23.9	24.0	15.0	24.2	19.4	24.0	28.0
Sciences	14.5	14.0	9.7	14.2	11.4	16.6	19.8
Physical and biological sciences	6.7	6.3	2.6	5.3	4.5	10.1	11.1
Social sciences	7.8	7.7	7.1	9.0	6.9	6.5	8.7
Humanities	9.5	10.0	5.3	10.0	8.0	7.4	8.2
Professional/technical	76.1	76.0	85.0	75.8	80.6	76.0	72.0
Business and management	21.6	22.3	17.3	15.6	20.0	23.7	18.7
Education	26.5	27.8	42.0	35.6	37.7	10.0	10.9
Computer and information sciences	2.3	1.8	1.2	1.3	3.1	7.1	5.5
Engineering	7.6	5.6	2.7	5.7	4.1	20.7	22.3
Other professional/technical	18.1	18.4	21.9	17.7	15.7	14.6	14.6

## Indicator 2:11

**Table 2:11-1. — Percentage distribution of field of study, by degree level and race/ethnicity: Academic years ending 1977 and 1985—Continued**

Degree level and field of study	1985						
	Total	White (non-Hispanic)	Black (non-Hispanic)	Hispanic	American Indian/Alaskan Native	Asian or Pacific Islander	Non-resident alien
	Master's degrees						
Number	280,421	223,628	13,939	6,864	1,256	7,782	26,952
Total percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Arts and sciences	20.5	20.5	13.1	21.3	17.8	20.1	24.5
Sciences	11.5	11.0	8.2	11.8	10.0	13.0	16.3
Physical and biological sciences	4.8	4.5	2.1	3.9	3.7	7.1	8.4
Social sciences	6.6	6.5	6.1	7.9	6.4	5.9	7.9
Humanities	9.0	9.4	4.9	9.5	7.8	7.1	8.3
Professional/technical	79.5	79.5	86.9	78.7	82.2	79.9	75.5
Business and management	23.7	24.4	18.7	17.1	21.6	26.6	21.6
Education	27.0	28.3	41.7	36.7	37.3	10.3	10.8
Computer and information sciences	2.5	1.9	1.3	1.4	3.3	7.9	6.3
Engineering	7.4	5.6	2.6	5.0	3.9	20.2	21.6
Other professional/technical	18.9	19.2	22.7	18.6	16.2	14.9	15.1

## Indicator 2:11

**Table 2:11-1. — Percentage distribution of field of study, by degree level and race/ethnicity: Academic years ending 1977 and 1985 — Continued**

Degree level and field of study	1985						
	Total	White (non-Hispanic)	Black (non-Hispanic)	Hispanic	American Indian/Alaskan Native	Asian or Pacific Islander	Non-resident alien
	Doctor's degrees						
Number	32,307	23,934	1,154	677	119	1,106	5,317
Total percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Arts and sciences	53.9	56.8	37.9	53.6	36.1	51.9	45.4
Sciences	40.6	42.0	27.7	38.8	26.1	41.8	37.6
Physical and biological sciences	23.0	23.1	8.2	19.5	13.4	31.1	24.6
Social sciences	17.6	18.9	19.5	19.4	12.6	10.7	13.0
Humanities	13.3	14.8	10.1	14.8	10.1	10.1	7.8
Professional/technical	46.1	43.2	62.1	46.4	63.9	48.1	54.6
Business and management	2.6	2.5	1.2	0.6	3.4	3.2	3.8
Education	21.8	23.5	45.1	24.1	42.9	7.6	11.2
Computer and information sciences	0.7	0.6	0.3	0.3	0.8	.3	1.3
Engineering	9.8	5.8	3.5	13.1	5.9	23.8	26.3
Other professional/technical	11.1	10.9	12.0	8.3	10.9	12.3	12.0

\*Advanced degrees include master's and doctor's degrees.

NOTE: The total number of degrees reported in this table for each degree level and field of study is lower, but by no more than 2 percent, than the total number of degrees conferred. This is because racial/ethnic data were not imputed for some of the institutions that did not report such data.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Digest of Education Statistics*, 1980 and 1988 editions (based on the HEGIS survey Earned Degrees Conferred, various years).

## Indicator 2:11

**Table 2:11-2. — Number of degrees earned, by field of study, degree level, and race/ethnicity: Academic years ending 1977 and 1985**

Degree level and field of study	1977						
	Total	White (non-Hispanic)	Black (non-Hispanic)	Hispanic	American Indian/Alaskan Native	Asian or Pacific Islander	Non-resident alien
Bachelor's degrees							
Total	915,131	805,186	58,515	18,663	3,319	13,745	15,703
Arts and sciences	398,600	351,803	23,892	9,298	1,393	6,438	5,776
Sciences	253,860	221,476	17,325	5,761	889	4,445	3,964
Physical and biological sciences	89,789	80,313	3,785	1,534	250	1,996	1,911
Social sciences	164,071	141,163	13,540	4,227	639	2,449	2,053
Humanities	144,740	130,327	6,567	3,537	504	1,993	1,812
Professional/technical	516,531	453,383	34,623	9,365	1,926	7,307	9,927
Business and management	151,723	132,814	9,976	2,588	433	2,596	3,316
Education	143,462	125,148	12,922	3,050	707	894	741
Computer and information sciences	6,370	5,473	361	93	15	163	265
Engineering	48,548	41,391	1,358	887	134	1,199	3,569
Other professional/technical	166,428	148,557	9,996	2,747	637	2,455	2,036
Advanced degrees*							
Total	348,771	291,933	22,277	6,591	1,062	5,773	21,085
Arts and sciences	89,835	76,235	3,431	1,828	231	1,640	6,470
Sciences	53,954	44,750	2,236	1,023	150	1,080	4,715
Physical and biological sciences	23,650	19,631	539	257	72	614	2,537
Social sciences	30,304	25,119	1,697	766	78	466	2,178
Humanities	35,881	31,485	1,195	805	81	560	1,755
Professional/technical	258,926	215,748	18,846	4,765	831	4,133	14,615
Business and management	47,025	39,808	1,634	579	109	953	3,942
Education	134,310	113,743	13,381	2,831	516	1,067	2,772
Computer and information sciences	2,940	2,296	67	46	4	116	411
Engineering	18,443	12,642	260	270	25	858	4,388
Other professional/technical	56,218	47,259	3,504	1,037	177	1,139	3,102

## Indicator 2:11

**Table 2:11-2.—Number of degrees earned, by field of study, degree level, and race/ethnicity: Academic years ending 1977 and 1985—Continued**

Degree level and field of study	1977						
	Total	White (non-Hispanic)	Black (non-Hispanic)	Hispanic	American Indian/Alaskan Native	Asian or Pacific Islander	Non-resident alien
Master's degrees							
Total	315,660	265,147	21,024	6,069	967	5,115	17,338
Arts and sciences	70,642	60,106	2,967	1,537	180	1,273	4,579
Sciences	39,850	33,102	1,907	820	110	761	3,150
Physical and biological sciences	16,091	13,544	432	171	48	393	1,503
Social sciences	23,759	19,558	1,475	649	62	368	1,647
Humanities	30,792	27,004	1,060	717	70	512	1,429
Professional/technical	245,018	205,041	18,057	4,532	787	3,842	12,759
Business and management	46,157	39,140	1,621	572	106	937	3,781
Education	126,355	107,127	12,696	2,667	484	990	2,391
Computer and information sciences	2,724	2,136	66	46	3	107	366
Engineering	15,869	11,089	237	245	23	734	3,541
Other professional/technical	53,913	45,549	3,437	1,002	171	1,074	2,680
Doctor's degrees							
Total	33,111	26,836	1,253	522	95	658	3,747
Arts and sciences	19,193	16,129	464	291	51	367	1,891
Sciences	14,104	11,648	329	203	40	319	1,565
Physical and biological sciences	7,559	6,087	107	86	24	221	1,034
Social sciences	6,545	5,561	222	117	16	98	531
Humanities	5,089	4,481	135	88	11	48	326
Professional/technical	13,918	10,707	789	231	44	291	1,856
Business and management	868	668	13	7	3	16	164
Education	7,955	6,616	685	164	32	77	311
Computer and information sciences	216	160	1	0	1	9	45
Engineering	2,574	1,553	23	25	2	124	847
Other professional/technical	2,305	1,710	67	35	6	65	422

## Indicator 2:11

**Table 2:11-2. — Number of degrees earned, by field of study, degree level, and race/ethnicity: Academic years ending 1977 and 1985—Continued**

Degree level and field of study	1985						
	Total	White (non-Hispanic)	Black (non-Hispanic)	Hispanic	American Indian/Alaskan Native	Asian or Pacific Islander	Non-resident alien
<b>Bachelor's degrees</b>							
Total	968,311	826,106	57,473	25,874	4,246	25,395	29,217
Arts and sciences	336,349	228,781	18,912	9,964	1,578	9,211	7,903
Sciences	206,873	175,697	12,407	6,092	966	6,457	5,254
Physical and biological sciences	76,555	64,629	3,640	1,915	318	3,593	2,460
Social sciences	130,318	111,068	8,767	4,177	648	2,864	2,794
Humanities	129,476	113,084	6,505	3,872	612	2,754	2,649
Professional/technical	631,962	537,325	33,561	15,910	2,668	16,184	21,314
Business and management	231,308	196,915	14,999	5,771	911	5,274	7,428
Education	87,788	77,531	5,456	2,533	483	770	1,015
Computer and information sciences	38,589	31,321	2,143	826	139	2,044	2,116
Engineering	94,560	76,438	3,159	2,242	313	5,013	7,395
Other professional/technical	179,717	155,120	12,804	4,538	812	3,083	3,360
<b>Advanced degrees*</b>							
Total	312,728	247,562	15,093	7,541	1,375	8,888	32,269
Arts and sciences	74,875	59,356	2,264	1,824	267	2,136	9,028
Sciences	45,232	34,689	1,461	1,073	157	1,475	6,377
Physical and biological sciences	20,938	15,625	388	397	62	900	3,566
Social sciences	24,294	19,064	1,073	676	95	575	2,811
Humanities	29,643	24,667	803	751	110	661	2,651
Professional/technical	237,853	188,206	12,829	5,717	1,108	6,752	23,241
Business and management	67,445	55,252	2,615	1,179	275	2,105	6,019
Education	82,853	68,917	6,333	2,682	519	885	3,517
Computer and information sciences	7,182	4,453	183	96	42	629	1,779
Engineering	23,909	13,977	400	429	56	1,836	7,211
Other professional/technical	56,464	45,607	3,298	1,331	216	1,297	4,715



## Indicator 2:11

**Table 2:11-2. —Number of degrees earned, by field of study, degree level, and race/ethnicity: Academic years ending 1977 and 1985—Continued**

Degree level and field of study	1985						
	Total	White (non-Hispanic)	Black (non-Hispanic)	Hispanic	American Indian/Alaskan Native	Asian or Pacific Islander	Non-resident alien
	Master's degrees						
Total	280,421	223,628	13,939	6,864	1,256	7,782	26,952
Arts and sciences	57,451	45,761	1,827	1,461	224	1,562	6,616
Sciences	32,118	24,648	1,141	810	126	1,013	4,380
Physical and biological sciences	13,516	10,097	293	265	46	556	2,259
Social sciences	18,602	14,551	848	545	80	457	2,121
Humanities	25,333	21,113	686	651	98	549	2,236
Professional/technical	222,970	177,867	12,112	5,403	1,032	6,220	20,336
Business and management	66,596	54,663	2,601	1,175	271	2,070	5,816
Education	75,821	63,302	5,812	2,519	468	801	2,919
Computer and information sciences	6,942	4,303	180	94	41	615	1,709
Engineering	20,735	12,600	360	340	49	1,573	5,813
Other professional/technical	52,876	42,999	3,159	1,275	203	1,161	4,079

## Indicator 2:11

**Table 2:11-2.—Number of degrees earned, by field of study, degree level, and race/ethnicity: Academic years ending 1977 and 1985--Continued**

Degree level and field of study	1985						
	Total	White (non-Hispanic)	Black (non-Hispanic)	Hispanic	American Indian/Alaskan Native	Asian or Pacific Islander	Non-resident alien
	Doctor's degrees						
Total	32,307	23,934	1,154	677	119	1,106	5,317
Arts and sciences	17,424	13,595	437	363	43	574	2,412
Sciences	13,114	10,041	320	263	31	462	1,997
Physical and biological sciences	7,422	5,528	95	132	16	344	1,307
Social sciences	5,692	4,513	225	131	15	118	690
Humanities	4,310	3,554	117	100	12	112	415
Professional/technical	14,883	10,339	717	314	76	532	2,905
Business and management	849	589	14	4	4	35	203
Education	7,032	5,615	521	163	51	84	598
Computer and information sciences	240	150	3	2	1	14	70
Engineering	3,174	1,377	40	89	7	263	1,398
Other professional/technical	3,588	2,608	139	56	13	136	636

\*Advanced degrees include master's and doctor's degrees.

NOTE: The total number of degrees reported in this table for each degree level and field of study is lower, but by no more than 2 percent, than the total number of degrees conferred. This is because racial/ethnic data were not imputed for some of the institutions that did not report such data.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Digest of Education Statistics*, 1980 and 1988 editions (based on the HEGIS survey Earned Degrees Conferred, various years).

## Indicator 2:12

**Table 2:12-1.—Average scale scores of white, non-Hispanic young adults aged 21 to 25 on the prose, document, and quantitative literacy scales, by educational attainment and enrollment status: 1985**

Scale	Educational attainment and enrollment status				
	High school graduate, not enrolled	Less than 2 years college, not enrolled	2 or more years college, not enrolled	2 or more years college, enrolled	College graduate
	Average scale score				
Prose	297.9	310.5	330.5	341.7	346.7
Document	301.1	316.0	332.9	346.1	351.6
Quantitative	298.4	315.6	327.0	344.2	348.6

SOURCE: U.S. Department of Education, Center for Education Statistics, "Young Adult Literacy and Schooling," Monograph, forthcoming.

## Indicator 2:12

**Table 2:12-2. — Percent of white, non-Hispanic young adults aged 21 to 25 at or above scale levels on the prose, document, and quantitative literacy scales, by educational attainment and enrollment status: 1985**

Scale and scale level*	Educational attainment and enrollment status				
	High school graduate, not enrolled	Less than 2 years college, not enrolled	2 or more years college, not enrolled	2 or more years college, enrolled	College graduate
Percent at or above scale level					
<b>Prose</b>					
350	11.5	18.6	29.7	44.1	47.3
300	50.7	60.9	81.1	83.2	85.9
250	87.4	91.7	96.9	97.7	98.3
200	98.3	98.2	99.9	100.0	100.0
150	99.9	99.4	100.0	100.0	100.0
<b>Document</b>					
350	10.5	19.1	35.7	48.8	52.4
300	53.3	67.9	79.1	87.1	88.6
250	87.6	92.0	95.8	98.9	99.3
200	98.8	99.4	99.9	100.0	99.9
150	99.9	100.0	100.0	100.0	100.0
<b>Quantitative</b>					
350	11.5	19.5	31.6	46.6	48.4
300	51.4	64.7	73.0	85.2	88.0
250	85.0	96.3	94.7	97.9	99.1
200	98.2	99.7	100.0	100.0	100.0
150	99.9	100.0	100.0	100.0	100.0

\*Scale level refers to the point on the scale at which individuals with that level of proficiency have an 80 percent probability of correctly responding to tasks at that level.

SOURCE: U.S. Department of Education, Center for Educational Statistics, "Young Adult Literacy and Schooling," *Monograph*, forthcoming.

## Indicator 2:13

**Table 2:13-1. — Percentage distribution of general education revenues of higher education, by control and level of institution and source of revenue: Fiscal year 1986**

Source of revenue	Level of institution		
	All	4-year	2-year
All institutions			
Total	100.0	100.0	100.0
Tuition and fees	27.0	28.8	16.4
Government appropriations	42.3	38.2	66.3
Federal	2.1	2.4	0.6
State and local	40.2	35.8	65.8
Government grants and contracts	17.5	17.9	15.1
Federal	15.0	15.6	11.6
State and local	2.5	2.3	3.5
Private gifts, grants and contracts	7.1	8.1	1.2
Endowment income	3.0	3.5	0.3
Sales and services of educational activities	3.1	3.5	0.6
Public institutions			
Total	100.0	100.0	100.0
Tuition and fees	14.6	15.2	12.1
Government appropriations	61.1	58.4	72.0
Federal	2.7	3.2	0.6
State and local	58.4	55.2	71.4
Government grants and contracts	16.4	16.9	14.6
Federal	13.8	14.6	10.9
State and local	2.6	2.3	3.7
Private gifts, grants and contracts	4.1	4.9	0.6
Endowment income	0.8	0.9	0.1
Sales and services of educational activities	3.1	3.7	0.6

## Indicator 2:13

**Table 2:13-1.—Percentage distribution of general education revenues of higher education, by control and level of institution and source of revenue: Fiscal year 1986—Continued**

Source of revenue	Level of institution		
	All	4-year	2-year
	Private institutions		
Total	100.0	100.0	100.0
Tuition and fees	53.4	52.9	66.7
Government appropriations	2.3	2.3	1.1
Federal	0.9	0.9	0.6
State and local	1.4	1.4	0.6
Government grants and contracts	19.8	19.8	21.4
Federal	17.5	17.4	19.4
State and local	2.4	2.4	2.0
Private gifts, grants and contracts	15.6	13.8	7.5
Endowment income	7.7	7.9	2.0
Sales and services of educational activities	3.2	3.3	1.3

NOTE: Percentages were calculated from unrounded data.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Digest of Education Statistics, 1988* (based on the HEGIS survey Financial Statistics of Institutions of Higher Education, fiscal year 1986).

## Indicator 2:13

**Table 2:13-2.—General education revenues (in current dollars) for institutions of higher education, by control of institution and source of revenue: Selected fiscal years 1976–1986**

Source of revenue	(In billions)					
	1976	1978	1980	1982	1984	1986
	All institutions					
Total	\$30.7	\$36.5	\$44.7	\$54.7	\$61.6	\$76.1
Tuition and fees	8.2	9.9	11.9	15.8	17.6	20.6
Government appropriations	14.0	16.7	20.1	23.9	26.9	32.2
Federal	0.9	1.0	1.2	1.3	1.4	1.6
State and local	13.2	15.7	18.9	22.6	25.5	30.6
Government grants and contracts	5.2	5.9	7.5	8.2	8.8	13.3
Federal	4.5	5.1	6.5	7.0	7.4	11.4
State and local	0.7	0.8	1.0	1.2	1.4	1.9
Private gifts, grants and contracts	1.9	2.3	2.8	3.6	4.4	5.4
Endowment income	0.7	0.8	1.2	1.6	1.9	2.3
Sales and services of educational activities	0.6	0.9	1.2	1.6	2.0	2.4
	Public institutions					
Total	21.7	25.7	31.3	37.5	41.6	51.8
Tuition and fees	3.5	4.1	4.9	6.4	6.6	7.6
Government appropriations	13.8	16.4	19.7	23.4	26.4	31.6
Federal	0.8	0.9	1.0	1.1	1.2	1.4
State and local	13.0	15.5	18.7	22.3	25.2	30.2
Government grants and contracts	3.3	3.7	4.7	5.1	5.4	8.5
Federal	2.8	3.1	4.0	4.2	4.4	7.2
State and local	0.5	0.6	0.7	0.9	1.0	1.3
Private gifts, grants and contracts	0.6	0.8	1.0	1.3	1.6	2.1
Endowment income	0.1	0.1	0.2	0.2	0.3	0.4
Sales and services of educational services	0.4	0.6	0.8	1.1	1.3	1.6

## Indicator 2:13

**Table 2:13-2.—General education revenues (in current dollars) for institutions of higher education, by control of institution and source of revenue: Selected fiscal years, 1976–1986—Continued**

(In billions)

Source of revenue	1976	1978	1980	1982	1984	1986
	Private institutions					
Total	\$9.0	\$10.8	\$13.6	\$17.3	\$20.0	\$24.3
Tuition and fees	4.7	5.7	7.1	9.4	11.0	13.0
Government appropriations	0.3	0.4	0.4	0.5	0.5	0.5
Federal	0.1	0.2	0.2	0.2	0.2	0.2
State and local	0.2	0.2	0.2	0.3	0.3	0.3
Government grants and contracts	1.9	2.2	2.9	3.2	3.4	4.8
Federal	1.7	2.0	2.6	2.8	2.9	4.2
State and local	0.2	0.2	0.3	0.4	0.5	0.6
Private gifts, grants and contracts	1.3	1.5	1.8	2.3	2.8	3.3
Endowment income	0.6	0.7	1.0	1.4	1.6	1.9
Sales and services of educational activities	0.2	0.3	0.4	0.5	0.7	0.8

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Digest of Education Statistics*, [various years] (based on the HEGIS survey Financial Statistics of Institutions of Higher Education, various years).



## Indicator 2:13

**Table 2:13-3. — General education revenues (in constant 1986 dollars) for institutions of higher education, by control of institution and source of revenue: Selected fiscal years, 1976–1986**

(In billions)

Source of revenue	1976	1978	1980	1982	1984	1986
All institutions						
Total	\$60.3	\$63.4	\$62.9	\$63.2	\$65.8	\$76.1
Tuition and fees	16.0	17.1	16.7	18.2	18.8	20.6
Government appropriations	27.6	29.1	28.2	27.6	28.7	32.2
Federal	1.8	1.8	1.7	1.5	1.5	1.6
State and local	25.8	27.3	26.5	26.1	27.2	30.6
Government grants and contracts	10.2	10.2	10.6	9.5	9.4	13.3
Federal	8.8	8.8	9.2	8.1	7.9	11.4
State and local	1.4	1.4	1.5	1.4	1.5	1.9
Private gifts, grants and contracts	3.8	4.0	3.9	4.1	4.7	5.4
Endowment income	1.3	1.4	1.6	1.8	2.0	2.3
Sales and services of educational activities	1.3	1.5	1.7	1.8	2.1	2.4
Public institutions						
Total	42.5	44.6	43.8	43.3	44.5	51.8
Tuition and fees	6.8	7.2	6.8	7.4	7.1	7.6
Government appropriations	27.0	28.5	27.6	27.0	28.2	31.6
Federal	1.5	1.6	1.4	1.3	1.3	1.4
State and local	25.5	26.9	26.2	25.8	26.9	30.2
Government grants and contracts	6.5	6.4	6.6	5.9	5.8	8.5
Federal	5.5	5.4	5.6	4.9	4.7	7.2
State and local	0.9	1.0	1.0	1.0	1.0	1.3
Private gifts, grants and contracts	1.2	1.3	1.4	1.5	1.7	2.1
Endowment income	0.2	0.2	0.3	0.3	0.3	0.4
Sales and services of educational activities	0.8	1.0	1.1	1.2	1.4	1.6

## Indicator 2:13

**Table 2:13-3.—General education revenues (in constant 1986 dollars) for institutions of higher education, by control of institution and source of revenue: Selected fiscal years 1976–1986—Continued**

(In billions)

Source of revenue	1976	1978	1980	1982	1984	1986
	Private institutions					
Total	17.7	18.8	19.1	19.9	21.3	24.3
Tuition and fees	9.2	9.9	10.0	10.8	11.7	13.0
Government appropriations	0.6	0.6	0.6	0.6	0.5	0.5
Federal	0.2	0.3	0.3	0.2	0.2	0.2
State and local	0.3	0.3	0.3	0.3	0.3	0.3
Government grants and contracts	3.8	3.8	4.1	3.7	3.6	4.8
Federal	3.3	3.4	3.6	3.3	3.1	4.2
State and local	0.5	0.4	0.5	0.4	0.5	0.6
Private gifts, grants and contracts	2.6	2.7	2.6	2.6	3.0	3.3
Endowment income	1.2	1.2	1.4	1.6	1.7	1.9
Sales and services of educational activities	0.4	0.6	0.6	0.6	0.7	0.8

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Digest of Education Statistics, [various years]* (based on the HEGIS survey Financial Statistics of Institutions of Higher Education, various years).

## Indicator 2:14

**Table 2:14-1.—Index of expenditures (in constant dollars) per full-time-equivalent student at public institutions of higher education, by type of institution: Academic years ending 1977-1986**

(1977 = 100)

Educational and general expenditures <sup>1</sup>								
Year	Total	Instruc- tion	Admini- stration <sup>2</sup>	Research	Libraries	Public service	Operation and plant maintenance	Scholar- ships and fellowships
Universities								
1977	100	100	100	100	100	100	100	100
1978	101	102	103	102	96	98	102	96
1979	103	103	104	106	94	103	105	90
1980	99	98	96	105	103	98	99	86
1981	96	95	96	103	89	99	96	85
1982	96	95	97	100	88	96	98	83
1983	97	97	98	102	91	97	101	85
1984	101	100	102	105	96	100	104	91
1985	107	105	112	114	98	106	109	96
1986	114	110	120	122	104	113	110	107
Other 4-year								
1977	100	100	100	100	100	100	100	100
1978	101	101	102	102	100	100	102	90
1979	102	101	106	110	99	102	103	85
1980	100	97	105	114	98	106	102	84
1981	98	95	103	112	98	106	102	79
1982	99	97	103	107	94	105	104	71
1983	98	97	102	106	92	105	104	74
1984	100	98	110	108	97	108	99	74
1985	108	104	118	120	101	123	109	74
1986	114	110	125	132	104	129	105	84

## Indicator 2:14

**Table 2:14-1.—Index of expenditures (in constant dollars) per full-time-equivalent student at public institutions of higher education, by type of institution: Academic years ending 1977–1986—Continued**

(1977 = 100)

Educational and general expenditures <sup>1</sup>								
Year	Total	Instruc- tion	Admini- stration <sup>2</sup>	Research	Libraries	Public service	Operation and plant maintenance	Scholar- ships and fellowships
					2-year			
1977	100	100	100	(3)	100	(3)	100	100
1978	101	100	105	(3)	101	(3)	102	76
1979	102	100	108	(3)	98	(3)	103	78
1980	97	96	102	(3)	89	(3)	102	78
1981	93	92	97	(3)	83	(3)	99	71
1982	93	93	98	(3)	90	(3)	102	66
1983	90	90	97	(3)	77	(3)	98	65
1984	92	92	100	(3)	78	(3)	100	64
1985	103	101	113	(3)	85	(3)	111	76
1986	108	106	121	(3)	89	(3)	115	81

<sup>1</sup> Data are in constant dollars, adjusted by the Consumer Price Index for the academic year (July–June). Mandatory transfers are included in the total but are not shown separately.

<sup>2</sup> Administration expenditures include institutional support, student services, and academic support minus library costs.

<sup>3</sup> Not calculated; expenditure category constituted 2.0 percent or less of total expenditures in most years.

SOURCE: U.S. Department of Education, Center for Education Statistics, "Recent Trends in Higher Education Finance, 1976–77 to 1985–86," *Higher Education Administrative Costs: Continuing the Study*, (based on the HEGIS surveys Financial Statistics of Institutions of Higher Education, Institutional Characteristics of Colleges and Universities, and Fall Enrollment in Colleges and Universities), January 1988.

## Indicator 2:14

**Table 2:14-2.—Index of expenditures (in constant dollars) per full-time-equivalent student at private, nonprofit institutions of higher education, by type of institution: Academic years ending 1977–1986**

(1977 = 100)

Educational and general expenditures <sup>1</sup>								
Year	Total	Instruc- tion	Admini- stration <sup>2</sup>	Research	Libraries	Public service	Operation and plant maintenance	Scholar- ships and fellowships
Universities								
1977	100	100	100	100	100	100	100	100
1978	99	99	100	98	100	93	99	102
1979	98	97	104	97	92	92	101	98
1980	97	96	102	94	86	100	98	94
1981	97	97	102	91	86	90	101	98
1982	97	100	103	88	87	88	105	98
1983	100	104	112	85	87	93	105	101
1984	109	110	124	92	99	96	112	118
1985	115	115	130	99	97	125	117	127
1986	122	121	139	107	102	130	120	137
Other 4-year								
1977	100	100	100	100	100	100	100	100
1978	100	100	101	95	100	90	101	98
1979	99	99	101	103	97	90	99	95
1980	98	96	100	103	92	88	100	96
1981	97	94	102	97	90	94	100	98
1982	99	96	105	91	90	104	101	101
1983	103	100	111	91	96	104	103	104
1984	108	104	116	95	99	108	106	115
1985	114	109	123	103	103	116	108	127
1986	120	113	130	115	107	128	110	139

## Indicator 2:14

**Table 2:14-2.—Index of expenditures (in constant dollars) per full-time-equivalent student at private, nonprofit institutions of higher education, by type of institution: Academic years ending 1977–1986—Continued**  
(1977 = 100)

Year	Educational and general expenditures <sup>1</sup>							
	Total	Instruction	Administration <sup>2</sup>	Research	Libraries	Public service	Operation and plant maintenance	Scholarships and fellowships
					2-year			
1977	100	100	100	(3)	100	(3)	100	100
1978	95	94	98	(3)	96	(3)	93	93
1979	97	97	101	(3)	92	(3)	90	99
1980	93	92	98	(3)	87	(3)	86	102
1981	92	90	97	(3)	78	(3)	88	103
1982	90	89	98	(3)	75	(3)	83	91
1983	95	93	101	(3)	76	(3)	89	106
1984	96	91	104	(3)	77	(3)	93	115
1985	107	102	118	(3)	86	(3)	101	129
1986	110	106	122	(3)	87	(3)	102	133

Data are in constant dollars, adjusted by the Consumer Price Index for the academic year (July–June). Mandatory transfers are included in the total but are not shown separately.

<sup>2</sup> Administration expenditures include institutional support, student services, and academic support minus library costs.

<sup>3</sup> Not calculated; expenditure category constituted 2.0 percent or less of total expenditures.

SOURCE: U.S. Department of Education, Center for Education Statistics, "Recent Trends in Higher Education Finance, 1976–77 to 1985–86," *Higher Education Administrative Costs: Continuing the Study*, (based on the HEGIS surveys Financial Statistics of Institutions of Higher Education, Institutional Characteristics of Colleges and Universities, and Fall Enrollment in Colleges and Universities), January 1988.

## Indicator 2:14

**Table 2:14-3.—Index of average undergraduate tuition charges (in constant dollars) at institutions of higher education, by type and control of institution: Academic years ending 1977-1986**

(1977 = 100)

Year	Public institutions			Private institutions		
	University	Other 4-year	2-year	University	Other 4-year	2-year
1977	100	100	100	100	100	100
1978	100	99	101	99	100	100
1979	97	94	99	98	101	99
1980	92	89	95	94	97	98
1981	90	87	92	95	98	103
1982	94	90	95	100	102	106
1983	101	99	100	109	110	113
1984	107	108	108	117	116	112
1985	112	110	115	124	121	121
1986	118	115	118	132	127	127

NOTE: Tuition charges (tuition and fees) are in constant dollars, adjusted by the Consumer Price Index for the academic year (July-June). They are for the entire academic year and are average charges paid by students. They were calculated on the basis of full-time-equivalent undergraduates. Tuition at public institutions is the charge to in-State students. The amount at private institutions includes charges at both nonprofit and proprietary schools.

SOURCE: U.S. Department of Education, Center for Education Statistics, "Recent Trends in Higher Education Finance, 1976-77 to 1985-86," *Higher Education Administrative Costs: Continuing the Study*, (based on the HEGIS survey Financial Statistics of Institutions of Higher Education, Institutional Characteristics of Colleges and Universities, and Fall Enrollment in Colleges and Universities), January 1988.

## Indicator 2:15

**Table 2:15-1.—Average faculty salaries (in constant 1985–86 dollars) in institutions of higher education, by academic rank and control and type of institution: Academic years ending 1972–1986**

Year	All institutions			Public institutions			Private institutions		
	Professor	Associate professor	Assistant professor	Professor	Associate professor	Assistant professor	Professor	Associate professor	Assistant professor
All institutions									
1972	\$48,525	\$36,746	\$30,374	\$49,018	\$37,399	\$30,904	\$47,553	\$35,280	\$29,140
1973	48,759	37,041	30,577	49,427	37,874	31,227	47,450	35,190	29,084
1975	44,673	33,884	27,921	45,344	34,814	28,690	43,281	31,690	26,131
1976	44,354	33,400	27,397	45,021	34,328	28,145	43,020	31,230	25,732
1977	44,115	33,199	27,186	44,671	34,036	27,867	42,928	31,134	25,631
1978	43,669	32,990	26,983	44,294	33,853	27,724	42,289	30,790	25,260
1979	42,045	31,843	26,008	42,555	32,664	26,734	40,871	29,735	24,330
1980	39,791	30,068	24,481	40,345	30,895	25,211	38,499	28,006	22,852
1981	38,638	29,166	23,747	39,045	29,867	24,413	37,684	27,431	22,322
1982	38,778	29,280	23,850	38,948	29,875	24,480	38,371	27,782	22,519
1983	39,396	29,842	24,449	39,322	30,313	24,983	39,575	28,684	23,338
1985	40,896	30,813	25,383	40,667	31,236	25,885	41,448	29,803	24,352
1986	42,268	31,787	26,277	42,328	32,367	26,951	42,118	30,400	24,891
4-year institutions									
1972	48,858	36,771	30,347	49,446	37,426	30,884	47,745	35,408	29,221
1973	49,117	37,016	30,469	49,913	37,865	31,121	47,659	35,295	29,150
1975	44,987	33,775	27,722	45,796	34,720	28,486	43,438	31,790	26,210
1976	44,684	33,385	27,338	45,472	34,375	28,137	43,216	31,331	25,811
1977	44,356	33,188	27,144	45,005	34,095	27,882	43,047	31,197	25,690
1978	43,886	32,961	26,863	44,596	33,899	27,651	42,418	30,858	25,315
1979	42,291	31,847	25,918	42,896	32,751	26,693	40,985	29,808	24,396
1980	40,072	30,093	24,405	40,743	31,022	25,190	38,625	28,072	22,916
1981	38,968	29,230	23,704	39,504	30,026	24,428	37,804	27,499	22,385
1982	39,112	29,341	23,819	39,403	30,032	24,513	38,466	27,830	22,576
1983	39,783	29,944	24,448	39,815	30,496	25,038	39,715	28,765	23,410
1985	41,416	30,964	25,449	41,341	31,482	26,020	41,581	29,891	24,446
1986	42,303	31,940	26,335	43,044	32,642	27,100	42,260	30,486	24,987
Universities									
1972	52,865	38,826	31,771	52,038	38,596	31,596	54,939	39,511	32,358
1973	52,961	38,906	31,833	52,223	38,721	31,675	54,669	39,425	32,325
1975	48,457	35,403	28,874	47,726	35,337	28,894	50,020	35,572	28,826
1976	48,331	35,205	28,634	47,624	35,271	28,774	49,764	35,036	28,311
1977	48,059	34,959	28,341	47,234	34,900	28,367	49,897	35,126	28,277
1978	47,378	34,555	27,915	46,551	34,444	27,868	49,251	34,868	28,029
1979	45,862	33,415	26,949	45,055	33,352	26,906	47,776	33,595	27,060
1980	43,279	31,436	25,303	42,457	31,357	25,274	45,243	31,652	25,378
1981	42,243	30,646	24,731	41,392	30,490	24,672	44,259	31,071	24,867
1982	42,424	30,777	25,010	41,294	30,494	24,872	45,174	31,580	25,336
1983	43,645	31,594	25,937	42,168	31,133	25,620	47,286	32,914	26,709
1985	45,398	32,624	27,129	43,508	31,965	26,656	50,016	34,441	28,271
1986	46,994	33,704	28,242	45,322	33,133	27,887	51,355	35,307	29,125



## Indicator 2:15

**Table 2:15-1.—Average faculty salaries (in constant 1985–86 dollars) in institutions of higher education, by academic rank and control and type of institution: Academic years ending 1972–1986—Continued**

Year	All institutions			Public institutions			Private institutions		
	Professor	Associate professor	Assistant professor	Professor	Associate professor	Assistant professor	Professor	Associate professor	Assistant professor
	Other 4-year								
1972	\$44,230	\$35,004	\$29,300	\$45,784	\$36,195	\$30,219	\$42,045	\$33,120	\$27,876
1973	44,862	35,431	29,517	46,888	37,002	30,640	41,944	32,940	27,773
1975	41,628	32,681	27,077	43,783	34,259	28,230	37,915	29,774	25,060
1976	41,188	32,209	26,627	43,389	33,733	27,752	37,572	29,400	24,680
1977	40,896	32,065	26,472	42,786	33,520	27,574	37,423	29,307	24,555
1978	40,772	31,975	26,280	42,753	33,523	27,515	36,988	28,959	24,146
1979	39,210	30,910	25,349	40,927	32,351	26,560	35,801	28,069	23,268
1980	37,322	29,267	23,895	39,182	30,791	25,135	33,649	26,387	21,858
1981	36,182	28,342	23,115	37,814	29,700	24,267	32,884	25,759	21,282
1982	36,405	28,475	23,156	37,778	29,718	24,280	33,583	26,128	21,428
1983	36,715	28,946	23,628	37,826	30,054	24,659	34,469	26,930	22,091
1985	38,288	29,940	24,519	39,530	31,139	25,605	35,796	27,831	22,903
1986	39,610	30,864	25,314	41,170	32,296	26,597	36,455	28,365	23,412
	2-year								
1972	39,049	36,387	30,666	40,241	37,113	31,065	27,281	27,090	24,544
1973	42,363	37,353	31,559	43,416	37,948	31,914	27,183	28,149	25,244
1975	39,874	34,962	29,329	40,573	35,480	29,698	26,219	25,547	22,385
1976	38,784	33,544	27,853	39,732	34,006	28,188	24,327	24,749	21,761
1977	38,923	33,305	27,526	39,596	33,596	27,781	26,309	25,881	22,230
1978	39,651	33,264	27,838	40,348	33,549	28,073	24,570	25,060	21,620
1979	37,678	31,805	26,668	38,222	32,094	26,941	25,090	24,160	20,440
1980	35,184	29,845	25,044	35,724	30,099	25,315	23,204	22,682	19,042
1981	33,330	28,583	24,080	33,772	28,831	24,336	23,426	22,219	18,423
1982	33,751	28,733	24,087	34,056	28,895	24,317	24,747	23,253	18,813
1983	34,009	28,966	24,451	34,428	29,208	24,708	23,089	21,825	19,026
1985	34,470	29,532	24,878	34,785	29,776	25,182	24,264	21,997	18,975
1986	36,076	30,483	25,823	36,418	30,733	26,162	24,519	22,291	19,297

NOTE: Salaries are for full-time instructional faculty on 9- or 10-month contracts. They have been converted to constant dollars for the academic year 1985–86 (July 1–June 30) using the Consumer Price Index (CPI).

SOURCE: U.S. Department of Education, Center for Education Statistics, *Salaries and Fringe Benefits, 1971–72 and 1972–73*; *Salaries and Tenure of Instructional Faculty in Institutions of Higher Education, 1974–75*; *Salaries, Tenure and Fringe Benefits of Full-Time Instructional Staff in Institutions of Higher Education 1975–76*; "College Faculty Salaries 1976–86," *OERI Bulletin*, 1987; and *Digest of Education Statistics, 1987*.

## Indicator 2:15

**Table 2:15-2.—Average faculty salaries (in current dollars) in institutions of higher education, by academic rank and control and type of institution: Academic years ending 1972–1986**

Year	All institutions			Public institutions			Private institutions		
	Professor	Associate professor	Assistant professor	Professor	Associate professor	Assistant professor	Professor	Associate professor	Assistant professor
All institutions									
1972	\$18,349	\$13,895	\$11,486	\$18,536	\$14,142	\$11,686	\$17,982	\$13,341	\$11,019
1973	19,182	14,572	12,029	19,445	14,900	12,285	18,667	13,844	11,442
1975	21,264	16,128	13,290	21,583	16,571	13,656	20,601	15,084	12,438
1976	22,610	17,026	13,966	22,950	17,499	14,347	21,930	15,920	13,117
1977	23,792	17,905	14,662	24,092	18,356	15,029	23,152	16,791	13,823
1978	25,133	18,987	15,530	25,493	19,484	15,955	24,339	17,721	14,538
1979	26,470	20,047	16,374	26,791	20,564	16,831	25,731	18,720	15,317
1980	28,388	21,451	17,465	28,786	22,041	17,986	27,466	19,980	16,303
1981	30,753	23,214	18,901	31,077	23,772	19,431	29,994	21,833	17,767
1982	33,539	25,324	20,828	33,686	25,839	21,173	33,187	24,029	19,477
1983	35,540	26,921	22,056	35,473	27,346	22,538	35,701	25,876	21,054
1985	39,743	29,945	24,668	39,521	30,355	25,155	40,280	28,963	23,666
1986	42,268	31,787	26,277	42,328	32,367	26,951	42,118	30,400	24,891
4-year institutions									
1972	18,475	13,905	11,475	18,698	14,152	11,678	18,054	13,389	11,050
1973	19,323	14,562	11,987	19,636	14,896	12,243	18,749	13,885	11,468
1975	21,413	16,076	13,195	21,798	16,526	13,559	20,676	15,131	12,476
1976	22,778	17,019	13,936	23,180	17,523	14,343	22,030	15,971	13,158
1977	23,922	17,899	14,633	24,272	18,388	15,037	23,216	16,825	13,855
1978	25,258	18,970	15,461	25,667	19,510	15,914	24,413	17,760	14,570
1979	26,625	20,050	16,317	27,006	20,619	16,805	25,803	18,766	15,359
1980	28,588	21,469	17,411	29,067	22,132	17,971	27,556	20,027	16,349
1981	31,016	23,265	18,867	31,442	23,898	19,442	30,089	21,887	17,816
1982	33,828	25,377	20,601	34,080	25,975	21,201	33,269	24,070	19,526
1983	35,889	27,013	22,055	35,918	27,511	22,588	35,828	25,949	21,118
1985	40,249	30,091	24,731	40,176	30,595	25,297	40,409	29,049	23,757
1986	42,803	31,940	26,335	43,044	32,642	27,100	42,260	30,486	24,987
Universities									
1972	19,991	14,682	12,014	19,678	14,595	11,948	20,775	14,941	12,236
1973	20,835	15,306	12,523	20,545	15,233	12,461	21,507	15,510	12,717
1975	23,065	16,851	13,744	22,717	16,820	13,753	23,809	16,932	13,721
1976	24,837	17,946	14,597	24,277	17,980	14,668	25,368	17,860	14,432
1977	25,919	18,854	15,285	25,474	18,822	15,299	26,910	18,944	15,250
1978	27,268	19,888	16,066	26,792	19,824	16,039	28,346	20,068	16,132
1979	28,873	21,037	16,966	28,365	20,997	16,939	30,078	21,150	17,036
1980	30,876	22,427	18,052	30,290	22,371	18,031	32,277	22,581	18,105
1981	33,622	24,392	19,684	32,945	24,268	19,637	35,227	24,730	19,792
1982	36,693	26,619	21,631	35,715	26,374	21,512	39,071	27,314	21,913
1983	39,373	28,502	23,398	38,041	28,086	23,112	42,658	29,692	24,095
1985	44,119	31,704	26,365	42,282	31,064	25,905	48,606	33,470	27,474
1986	46,994	33,704	28,242	45,322	33,133	27,887	51,355	35,307	29,125

## Indicator 2:15

**Table 2:15-2. — Average faculty salaries (in current dollars) in institutions of higher education, by academic rank and control and type of institution: Academic years ending 1972–1986—Continued**

Year	All institutions			Public institutions			Private institutions		
	Professor	Associate professor	Assistant professor	Professor	Associate professor	Assistant professor	Professor	Associate professor	Assistant professor
Other 4-year									
1972	\$16,725	\$13,236	\$11,080	\$17,313	\$13,687	\$11,427	\$15,899	\$12,524	\$10,541
1973	17,649	13,939	11,612	18,446	14,557	12,054	16,501	12,959	10,926
1975	19,814	15,556	12,888	20,840	16,307	13,437	18,047	14,172	11,928
1976	20,996	16,419	13,573	22,067	17,196	14,147	19,153	14,987	12,581
1977	22,056	17,293	14,277	23,075	18,078	14,871	20,183	15,806	13,243
1978	23,466	18,403	15,125	24,606	19,294	15,836	21,288	16,667	13,897
1979	24,685	19,460	15,959	25,766	20,367	16,721	22,539	17,671	14,649
1980	26,626	20,880	17,047	27,953	21,967	17,932	24,006	18,825	15,594
1981	28,798	22,558	18,398	30,097	23,639	19,315	26,173	20,502	16,939
1982	31,487	24,628	20,028	32,674	25,703	21,000	29,046	22,598	18,533
1983	33,121	26,113	21,315	34,124	27,112	22,245	31,095	24,294	19,929
1985	37,209	29,096	23,828	38,416	30,262	24,883	34,787	27,047	22,258
1986	39,610	30,864	25,314	41,170	32,296	26,597	36,455	28,365	23,412
2-year									
1972	14,766	13,760	11,596	15,217	14,034	11,747	10,316	10,244	9,281
1973	16,666	14,695	12,415	17,080	14,929	12,555	10,694	11,074	9,931
1975	18,980	16,641	13,960	19,312	16,888	14,136	12,480	12,160	10,655
1976	19,770	17,100	14,199	20,254	17,335	14,369	12,401	12,616	11,093
1977	20,992	17,962	14,845	21,355	18,119	14,983	14,189	13,958	11,989
1978	22,821	19,145	16,022	23,222	19,309	16,157	14,141	14,423	12,443
1979	23,721	20,023	16,789	24,063	20,205	16,961	15,796	15,210	12,868
1980	25,101	21,292	17,867	25,486	21,473	18,060	16,554	16,182	13,585
1981	26,528	22,750	19,166	26,880	22,947	19,370	18,645	17,685	14,663
1982	29,191	24,851	20,833	29,455	24,991	21,032	21,404	20,112	16,271
1983	30,680	26,131	22,058	31,058	26,349	22,290	20,829	19,689	17,164
1985	33,498	28,700	24,176	33,805	28,937	24,473	23,580	21,377	18,440
1986	36,076	30,483	25,823	36,418	30,733	26,162	24,519	22,291	19,297

NOTE: Salaries are for full-time instructional faculty on 9- or 10-month contracts.

SOURCE: U.S. Department of Education, Center for Education Statistics, *Salaries and Fringe Benefits, 1971–72 and 1972–73; Salaries and Tenure of Instructional Faculty in Institutions of Higher Education, 1974–75; Salaries, Tenure and Fringe Benefits of Full-Time Instructional Staff in Institutions of Higher Education, 1975–76; "College Faculty Salaries 1976–86," OERI Bulletin, 1987; and Digest of Education Statistics, 1987.*

## Indicator 2:15

**Table 2:15-3.—Index of average salaries (current dollars) of full-time instructional faculty<sup>1</sup> in institutions of higher education, by academic rank, and selected other professional occupations in medium-sized and large private firms: Academic years ending 1972–1986 (base year = academic year 1971–72)**

Occupation	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
Full professor	100	105	( <sup>2</sup> )	116	123	130	137	144	155	168	183	194	( <sup>3</sup> )	217	230
Associate professor	100	105	( <sup>2</sup> )	116	123	129	137	144	154	167	182	194	( <sup>3</sup> )	216	229
Assistant professor	100	105	( <sup>2</sup> )	116	122	128	135	143	152	165	180	192	( <sup>3</sup> )	215	229
Accountant	100	105	111	122	130	140	152	164	179	197	216	231	242	253	264
Chief accountant	100	106	113	123	131	145	157	169	188	206	229	239	252	268	282
Auditor	100	105	111	118	125	133	144	153	167	184	201	214	231	240	244
Attorney	100	106	112	121	128	135	148	151	176	193	215	231	242	257	274
Chemist	100	104	111	122	130	139	152	164	180	196	217	230	242	255	268
Engineer	100	105	111	120	128	136	149	161	177	196	216	232	244	256	267

<sup>1</sup> On 9- or 10-month contracts.

<sup>2</sup> Faculty salaries are not available for 1974.

<sup>3</sup> Data for 1984 were not edited and thus could not be used.

NOTE: Faculty salaries are for the period of the 9- or 10-month contract, and the salaries for other occupations are for March of the year.

SOURCE: U.S. Department of Education, National Center for Education Statistics, the HEGIS survey Salaries, Tenure, and Fringe Benefits of Full-Time Instructional Faculty, various years. U.S. Department of Labor, Bureau of Labor Statistics, *National Survey of Professional, Administrative, Technical, and Clerical Pay, March 1982 and March 1986.*

## Indicator 2:16

**Table 2:16-1. -- Enrollment in institutions of higher education, by type and control: Selected years, 1970-1987**

Fall of year	All institutions	Total		Public		Private	
		Public	Private	4-year	2-year	4-year	2-year
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	132
1978	11,260	8,786	2,475	4,912	3,874	2,320	155
1980	12,097	9,457	2,640	5,128	4,329	2,442	197
1982	12,426	9,696	2,730	5,176	4,520	2,478	252
1983	12,465	9,683	2,782	5,223	4,459	2,518	264
1984	12,242	9,477	2,765	5,198	4,279	2,513	251
1985	12,247	9,479	2,768	5,210	4,270	2,506	262
1986*	12,398	9,600	2,797	5,254	4,346	2,499	—
1987*	12,544	9,706	2,838	5,268	4,439	2,548	—

— Not available.

\* Estimates based on a sample survey.

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

SOURCES: U.S. Department of Education, National Center for Education Statistics, *Digest of Education Statistics, 1988* (based on the HEGIS survey Fall Enrollment in Institutions of Higher Education, various years); "National Estimates of Higher Education Statistics: 1987," *Early Estimates, 1987*.

## Indicator 2:17

**Table 2:17-1.—Trends in total enrollment in institutions of higher education, by part-time students, women, students 25 years or older, and graduate and professional students: Selected years, 1970–1987**

Fall of year	Total enrollment	Part-time students	Women students	Students 25 years or older <sup>1</sup>	Graduate and professional students
	In thousands	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
1982	12,426	41.9	51.5	35.6	12.9
1984	12,242	42.0	52.1	36.2	13.3
1986 <sup>2</sup>	12,398	42.3	52.8	38.6	13.5
1987 <sup>2</sup>	12,544	42.5	52.1	—	13.1

— Not available.

<sup>1</sup> Data on the percentage of students aged 25 or older come from the Bureau of the Census. Years 1972 to 1980 are controlled to the 1970 census base. Years 1981 to 1986 are controlled to the 1980 census base.

<sup>2</sup> Estimated.

SOURCES: U.S. Department of Education, National Center for Education Statistics, *Digest of Education Statistics, 1988* (based on the HEGIS survey Fall Enrollment in Colleges and Universities, various years); and "National Estimates of Higher Education Statistics: 1987," *Early Estimates, 1987*. U.S. Department of Commerce, Bureau of the Census, "School Enrollments—Social and Economic Characteristics of Students, October [various years]," *Current Population Reports, Series P-20*; and unpublished tabulations.

## Indicator 2:18

**Table 2:18-1. — Population and college enrollment, by selected age groups: 1980–1986**

(Numbers in thousands)

Year	Total college enrollment <sup>1</sup>	Population 18 to 24 years old			Population 25 years old and over		
		Total <sup>2</sup>	Enrolled in college		Total <sup>2</sup>	Enrolled in college	
			Number	Percent of total		Number	Percent of total
1980	11,387	29,252	7,226	24.7	132,730	3,910	2.9
1981	12,127	29,307	7,575	25.8	135,417	4,321	3.2
1982	12,308	29,162	7,678	26.3	138,223	4,377	3.2
1983	12,320	28,847	7,477	25.9	140,970	4,583	3.3
1984	12,304	28,323	7,591	26.8	143,671	4,460	3.1
1985	12,524	27,707	7,537	27.2	146,341	4,724	3.2
1986	12,401	26,976	7,397	27.4	149,115	4,788	3.2

<sup>1</sup> Total includes a few students between the ages of 14 and 17.

<sup>2</sup> Data have been revised from previously published figures.

SOURCES: U.S. Department of Commerce, Bureau of the Census, "Estimates of the Population of the United States, by Age, Sex and Race: 1980 to 1986," *Current Population Reports*, Series P-25, No. 1,000; "School Enrollment—Social and Economic Characteristics of Students: October 1983," *Current Population Reports*, Series P-20, No. 413; and unpublished tabulations.

## Indicator 2:19

**Table 2:19-1.—Participation rates of 18- to 24-year-olds in higher education, by race/ethnicity: 1970–1986**

Fall of year	White	Black	Hispanic*
	Percent enrolled		
1970	27.1	15.5	—
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	26.2	19.2	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
1986	28.3	21.6	17.6

— Not available.

\* Hispanics may be of any race.

SOURCE: U.S. Department of Commerce, Bureau of the Census, "School Enrollments—Social and Economic Characteristics of Students, October [various years]," *Current Population Reports*, Series P-20.